

DEPARTMENT OF TRANSPORTATION**Federal Highway Administration****23 CFR Part 490**

[FHWA Docket No. FHWA–2021–0004]

RIN 2125–AF99

National Performance Management Measures; Assessing Performance of the National Highway System, Greenhouse Gas Emissions Measure

AGENCY: Federal Highway Administration (FHWA), U.S. Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: This final rule amends FHWA's regulations governing national performance management measures and establishes a method for the measurement and reporting of greenhouse gas (GHG) emissions associated with transportation (GHG measure). It requires State departments of transportation (State DOT) and metropolitan planning organizations (MPO) to establish declining carbon dioxide (CO₂) targets for the GHG measure and report on progress toward the achievement of those targets. The rule does not mandate how low targets must be. Rather, State DOTs and MPOs have flexibility to set targets that are appropriate for their communities and that work for their respective climate change and other policy priorities, as long as the targets aim to reduce emissions over time. The FHWA will assess whether State DOTs have made significant progress toward achieving their targets.

DATES: This final rule is effective January 8, 2024.

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SUPPLEMENTARY INFORMATION:**Electronic Access and Filing**

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I. Executive Summary

The FHWA is amending its regulations on national performance management measures at 23 CFR part 490 (part 490) and establishing a method for the measurement and reporting of GHG emissions. The environmental sustainability, and specifically the carbon footprint, of the transportation system is a critically important attribute that State DOTs can and should use to assess the performance of the Interstate and non-Interstate NHS. Section 150(c) of Title 23, U.S.C., clearly directs FHWA to establish performance measures that the State DOTs can use to assess performance of the Interstate and non-Interstate NHS. Although the statute does not define the meaning of “performance” of the Interstate and non-Interstate NHS under 23 U.S.C. 150(c), Congress identified national goals under 23 U.S.C. 150(b), which include environmental sustainability. See 23 U.S.C. 150(b)(6). To support the environmental sustainability national goal, FHWA is interpreting “performance” of the Interstate System and non-Interstate NHS under 23 U.S.C. 150(c) to include the system's environmental performance. This definition of “performance” is also consistent with other Title 23, U.S.C. provisions, such as 23 U.S.C. 119, discussed later in this preamble.

The GHG measure established in this rule is the same as the measure proposed in the NPRM, which is the percent change in on-road tailpipe CO₂ emissions on the NHS relative to the reference year. The FHWA is finalizing a reference year of 2022 as part of this rule. The measure is part of the National Highway Performance Program (NHPP) performance measures that FHWA established in part 490 through prior rulemakings. The GHG measure requires State DOTs and MPOs that have NHS mileage within their State geographic boundaries and metropolitan planning area boundaries, respectively, to establish declining targets for reducing CO₂ emissions¹ generated by on-road

mobile sources. The regulation uses “NHS” to mean the mainline highways of the NHS, consistent with the applicability of the measure described in § 490.503(a)(2). Consistent with the Transportation Performance Management (TPM) framework, State DOTs will establish 2- and 4-year statewide emissions reduction targets, and MPOs will establish 4-year emissions reduction targets for their metropolitan planning areas. In addition, the rule will require certain MPOs serving UZAs with populations of 50,000 or more to establish additional joint targets. Specifically, when the metropolitan planning area boundaries of two or more MPOs overlap any portion of an UZA, and the UZA contains NHS mileage, those MPOs will establish joint 4-year targets for that UZA. This joint target will be established in addition to each MPO's target for their metropolitan planning area. State DOTs and MPOs have the flexibility to set targets that work for their respective climate change policies and other policy priorities, so long as they are declining. The State DOTs and MPOs are also required to report on their progress in meeting the targets. The final rule applies to the 50 States, the District of Columbia, and Puerto Rico, consistent with the definition of the term “State” in 23 U.S.C. 101(a). To realize the benefits of a GHG measure as soon as is practicable, State DOTs will first establish targets and report those targets by February 1, 2024, and subsequent targets will be established and reported no later than October 1, 2026, with biennial reports thereafter.

The GHG measure will help the United States (U.S.) confront the increasingly urgent climate crisis. The Sixth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC), released on August 7, 2021, confirms that human activities are increasing GHG concentrations that have warmed the atmosphere, ocean, and land at a rate that is unprecedented in at least the last 2000 years.² Changes in extreme events, along with anticipated future increases in the occurrence and severity of these events because of climate change, threaten the reliability, safety, and efficiency of the transportation system and the people who rely on it to move themselves and transport goods. At the same time,

¹ The proposed GHG measure specifically applies to CO₂ emissions, which is the predominant human-produced GHG. CO₂ is also the predominant GHG from on-road mobile sources, accounting for approximately 97 percent of total GHG emissions weighted by global warming potential in 2021. See U.S. Environmental Protection Agency, 2023: Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2021, table 2–13, available at <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021>.

² See IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, available at <https://www.ipcc.ch/report/ar6/wg1/#SPM>.

transportation contributes significantly to the causes of climate change,³ representing the largest source of U.S. CO₂ emissions, and each additional ton of CO₂ produced by the combustion of fossil fuels contributes to future warming and other climate impacts.

The GHG measure aligns with Executive Orders (E.O.) described later in this preamble and supports the U.S. target of reducing GHG emissions 50–52 percent below 2005 levels in 2030, on course to reaching net-zero emissions economywide no later than 2050.⁴ As a matter of transportation policy, DOT considers the GHG measure essential to improve transportation sector performance and demonstrate Federal leadership in the assessment and disclosure of climate pollution. The first step toward reducing GHG emissions involves inventorying and monitoring those emissions. By providing consistent and timely information about on-road mobile source emissions on the NHS, the GHG measure has the potential to increase public awareness of GHG emissions trends, improve the transparency of transportation decisions, enhance decisionmaking at all levels of government, and support better informed planning choices to reduce GHG emissions or inform tradeoffs among competing policy choices.

Furthermore, the rule responds to the direction in sections 1 and 2 of E.O. 13990 (86 FR 7037) that Federal agencies review any regulations issued or similar actions taken between January 20, 2017, and January 20, 2021, and, consistent with applicable law, take steps to address any such actions that

conflict with the national objectives set forth in the order to address climate change. The FHWA reviewed its 2018 final rule (83 FR 24920, May 31, 2018) that repealed a GHG measure FHWA adopted in 2017 (2017 GHG measure) and determined that the repeal conflicts with those objectives.

After reviewing the 2018 final rule, FHWA has reconsidered its position that the Agency's authority to promulgate the 2017 final rule reflected a "strained reading of the statutory language in section 150." 83 FR at 24923. The FHWA now concludes, as it did when establishing a GHG measure in the 2017 PM3 final rule, that it has the legal authority to establish the GHG measure under 23 U.S.C. 150. Specifically, FHWA is clearly directed under 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V) to establish measures for States to use to assess the performance of the Interstate System and non-Interstate NHS. Although the statute does not define performance, 23 U.S.C. 150(b)(6) identifies environmental sustainability as a national goal of the Federal-aid highway program, and Congress, in 23 U.S.C. 150(a), has declared that performance management, including the use of performance measures, is key to meeting the national goals of section 150(b). To address the national goal of environmental sustainability, FHWA has determined that the performance of the Interstate System and the NHS under 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V) logically includes environmental performance. The GHG measure is also appropriate in light of other provisions of Title 23, U.S.C., notably the NHPP provisions at 23 U.S.C. 119, which include requirements for State asset management plans that support progress toward the achievement of the national goals identified in 23 U.S.C. 150(b), including the national goal to enhance the performance of the transportation system while protecting and enhancing the natural environment at 23 U.S.C. 150(b)(6), and include a risk management analysis that specifically addresses extreme weather and resilience. See 23 U.S.C. 119(e)(2) and (e)(4)(D). This reconsideration is discussed in detail in section III.B in the NPRM, see 87 FR 42407–42410, and section III below.

The regulatory impact analysis (RIA) prepared pursuant to E.O. 12866, as amended by E.O. 14094, is available in the rulemaking docket (Docket No. FHWA–2021–0004). The RIA estimates the costs associated with establishing the GHG measure, derived from the costs of implementing the GHG measure for each component of the rule that may involve costs. To estimate the costs,

FHWA assessed the level of effort that would be needed to comply with each applicable section in part 490 with respect to the GHG measure, including labor hours by labor category, over a 10-year study period (2023–32). Total costs over this period are estimated to be \$10.8 million, discounted at 7 percent, and \$12.7 million, discounted at 3 percent. The RIA also discusses anticipated benefits of the rule qualitatively because the anticipated quantitative benefits are difficult to forecast and monetize. These benefits include: (1) more-informed decision-making through the creation of complete, consistent, and timely information on GHG emissions; (2) greater accountability through the establishment of a more highly visible and transparent performance reporting system; and (3) improved progress toward achieving national transportation goals by including declining targets for CO₂ emissions on the NHS in the set of existing performance requirements designed to help the Federal-aid highway program support balanced performance outcomes and national climate policies.

II. Background and Regulatory History

The 2012 Moving Ahead for Progress in the 21st Century Act (MAP–21) (Pub. L. 112–141) and the 2015 Fixing America's Surface Transportation (FAST Act) (Pub. L. 114–94) transformed the Federal-aid highway program by establishing performance management requirements and tasking FHWA with carrying them out. To implement this program, FHWA established an organizational unit with dedicated full-time staff to coordinate with program staff from each of the performance areas to design and establish an approach to effectively implement the Title 23 performance provisions. The FHWA has technical and policy experts on staff to assist State DOTs and MPOs with implementing performance management and oversee program requirements. The FHWA implemented this performance management network through multiple rulemakings, which established in 23 CFR part 490 the performance measures and requirements for target establishment, reporting on progress, and how determinations would be made on whether State DOTs have made significant progress toward applicable targets.

The TPM requirements provide increased accountability and transparency, and facilitate efficient investment of Federal transportation funds through a focus on performance outcomes for the seven national

³ Jacobs, J.M., M. Culp, L. Cattaneo, P. Chinowsky, A. Choate, S. DesRoches, S. Douglass, and R. Miller, 2018: Transportation, In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 479–511. doi: 10.7930/NCA4.2018.CH12.

⁴ White House Fact Sheet: The Biden-Harris Electric Vehicle Charging Action Plan (December 13, 2021), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/13/fact-sheet-the-biden-harris-electric-vehicle-charging-action-plan/>; White House Fact Sheet: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies (Apr. 22, 2021), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/>; White House Fact Sheet: President Biden's Leaders Summit on Climate (Apr. 23, 2021), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/23/fact-sheet-president-bidens-leaders-summit-on-climate/>.

transportation goals concerning safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays. *See* 23 U.S.C. 150(b). Through performance management, recipients of Federal-aid highway funds make transportation investments to achieve short-term performance targets and make progress toward the seven statutory national transportation goals. Performance management allows FHWA to more effectively evaluate and report on the Nation's surface transportation conditions and performance.

Prior to MAP-21, there were no explicit statutory requirements for State DOTs or MPOs to demonstrate how their transportation programs supported national performance outcomes, making it difficult to assess the effectiveness of the Federal-aid highway program. The TPM requirements established in MAP-21 changed this paradigm by requiring State DOTs and MPOs to measure condition or performance, establish targets, assess progress toward targets, and report on condition or performance in a nationally consistent manner for the first time. *See* 23 U.S.C. 150(e); 23 CFR 490.107. As previously noted, FHWA conducted several rulemakings implementing the performance management framework. Most relevant to this proposed rule are three related national performance management measure rulemakings in which FHWA established various measures for State DOTs and MPOs to use to assess performance, found at 23 CFR part 490. The first rulemaking focused on Safety Performance Management (PM1), and a final rule published on March 15, 2016 (81 FR 13882), established performance measures for State DOTs to use to carry out the Highway Safety Improvement Program (HSIP). The second rulemaking on Infrastructure Performance Management (PM2) resulted in a final rule published on January 18, 2017 (82 FR 5886), that established performance measures for assessing pavement condition and bridge condition for the NHPP. The third rulemaking, System Performance Management (PM3), established measures for State DOTs and MPOs to use to assess the performance of the Interstate and non-Interstate NHS for the purpose of carrying out the NHPP; to assess freight movement on the Interstate System; and to assess traffic congestion and on-road mobile source emissions for the purpose of carrying out the Congestion Mitigation and Air Quality (CMAQ) Program. The PM3 final rule was

published on January 18, 2017 (82 FR 5970). The PM3 rule addressed a broad set of performance issues and some of the national transportation goals, such as environmental sustainability, that were not addressed in the earlier rulemakings focused solely on safety and infrastructure condition. In the preamble to the PM3 proposed rule, published on April 22, 2016 (81 FR 23806), FHWA requested public comment on whether to establish a CO₂ emissions measure in the final rule and, if so, how to do so. The FHWA acknowledged the contribution of on-road sources to over 80 percent of U.S. transportation sector GHG emissions, and the historic Paris Agreement in which the U.S. and more than 190 other countries agreed in December 2015 to reduce GHG emissions, with the goal of limiting global temperature rise to less than 2 degrees Celsius above pre-industrial levels by 2050. The FHWA recognized that achieving U.S. climate goals would require significant GHG reductions from on-road transportation sources. *See* 81 FR 23830. Against this backdrop, FHWA stated that it was considering how GHG emissions could be estimated and used to inform planning and programming decisions to reduce long term emissions. The FHWA sought comment on the potential establishment and effectiveness of a GHG emissions measure as a planning, programming, and reporting tool, and FHWA requested feedback on specific considerations related to the design of such a measure. *See* 82 FR 23831.

In the PM3 final rule, after considering extensive public comments on whether and how FHWA should establish such a measure, FHWA established a GHG emissions performance measure to measure environmental performance in accordance with 23 U.S.C. 150(c)(3). The measure involved the percent change in CO₂ emissions from the reference year 2017, generated by on-road mobile sources on the NHS. After a change in Administration, FHWA repealed the 2017 GHG measure before the respective due dates for target setting or reporting. On October 5, 2017 (82 FR 46427), FHWA proposed to repeal the 2017 GHG measure. The FHWA requested public comment on whether to retain or revise the 2017 GHG measure. *See* 82 FR 46430. In light of policy direction at the time to review existing regulations to determine whether changes would be appropriate to eliminate duplicative regulations, reduce costs, and streamline regulatory processes, and after considering public comments received, on May 31, 2018

(83 FR 24920), FHWA repealed the GHG measure, effective on July 2, 2018. The FHWA identified three main reasons for the repeal: (1) reconsideration of the underlying legal authority; (2) the cost of the GHG measure in relation to the lack of demonstrated benefits; and (3) potential duplication of information produced by the GHG measure and information produced by other initiatives related to measuring CO₂ emissions.

On July 15, 2022 (87 FR 42401), FHWA published a NPRM to establish a GHG measure. After reconsidering the arguments for the 2018 final rule and finding them lacking, FHWA proposed to require State DOTs and MPOs that have NHS mileage within their State geographic boundaries and metropolitan planning area boundaries, respectively, to establish declining targets for reducing CO₂ emissions generated by on-road mobile sources, that align with the Administration's target of net-zero emissions, economy-wide, by 2050, accordance with the national policy established under section 1 of E.O. 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis", section 201 of E.O. 14008, "Tackling the Climate Crisis at Home and Abroad", and at the Leaders Summit on Climate. Under the proposed rule, State DOTs would establish 2- and 4-year statewide emissions reduction targets, and MPOs would establish 4-year emissions reduction targets for their metropolitan planning areas. In addition, FHWA proposed to require MPOs serving select UZA to establish additional joint targets. The term "urbanized area" means a geographic area with a population of 50,000 or more, as designated by the Bureau of the Census. *See* 23 U.S.C. 101(a)(36); 23 CFR 450.104. The NPRM specified that when the metropolitan planning area boundaries of two or more MPOs overlap any portion of the same UZA, and the UZA contains NHS mileage, those MPOs would establish joint 4-year targets for that UZA. This joint target would be established in addition to each MPO's target for their metropolitan planning area. Further, FHWA proposed to require State DOTs and MPOs to set declining targets for reducing tailpipe CO₂ emissions on the NHS. Under the NPRM, State DOTs and MPOs would have the flexibility to set targets that work for their respective climate change policies and other policy priorities, so long as they aligned with the goal of net-zero GHG emissions, economy-wide, by 2050. The FHWA also proposed to require State DOTs and MPOs to report on their progress in

meeting the targets. The FHWA identified that the proposed rule would apply to the 50 States, the District of Columbia, and Puerto Rico, consistent with the definition of the term “State” in 23 U.S.C. 101(a). The FHWA now finalizes the proposed measure with some modifications.

III. Statutory Authority for Performance Management and the GHG Measure

The FHWA is establishing the GHG emissions performance measure under 23 U.S.C. 150(c)(3), which calls for FHWA to establish performance measures that the States can use to assess performance of the Interstate and non-Interstate NHS for the purpose of carrying out the NHPP under 23 U.S.C. 119. *See* 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V). The FHWA received many comments both in support and in opposition to the Agency’s authority to promulgate this rulemaking. After considering these comments, FHWA reaffirms that Congress provided FHWA with clear authority to develop performance measures to help State DOTs and MPOs address significant and long-term issues impacting the performance of the transportation system. These comments and FHWA’s response are further discussed in Section VII of this preamble.

The FHWA has determined that measuring environmental performance of the Interstate and non-Interstate NHS is vital to meeting the Agency’s obligations under 23 U.S.C. 150. As discussed in the NPRM, Congress charged FHWA with establishing performance measures, but did not define the term “performance,” as used in 23 U.S.C. 150(c)(3). Thus, FHWA must interpret this term in the context of the statute, FHWA’s statutory authority in Title 23, U.S.C., to administer the Federal-aid highway program, and congressional intent. Accordingly, FHWA is interpreting “performance” of the Interstate System and non-Interstate NHS under 23 U.S.C. 150(c) to include the system’s environmental performance, consistent with the program’s statutorily mandated goal to enhance the performance of the transportation system while protecting and enhancing the natural environment. *See* 23 U.S.C. 150(b). As described further in this preamble, FHWA interprets this national goal to mean that the Agency should take reasonable steps to assist State DOTs and MPOs measure and evaluate the GHG emissions on the Interstate and non-Interstate NHS. The FHWA’s interpretation of performance under 23 U.S.C. 150(c) is consistent with 23 U.S.C. 119(e), which calls for

State DOTs to develop a performance-driven asset management plan that would “support progress toward the achievement of the national goals identified in section 150(b).” 23 U.S.C. 119(e)(2). In addition, 23 U.S.C. 119(b) provides the purposes of the NHPP, which include supporting the condition and performance of the NHS, supporting construction of new facilities on the NHS, ensuring investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State asset management plan, and supporting activities to increase the resiliency of the NHS to mitigate the cost of damages from sea level rise, extreme weather events, flooding, wildfires, or other natural disasters. Assessing environmental performance provides support for activities to increase the resiliency of the NHS to mitigate the cost of damages from sea level rise, extreme weather events, flooding, wildfires, or other natural disasters.

Importantly, FHWA does not believe its authority in this area is unlimited. Since 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V) refers only to the performance of the Interstate System and the non-Interstate NHS, FHWA only has authority to apply this measure to the Interstate System and the non-Interstate NHS. In addition, FHWA is only requiring that State DOTs and MPOs establish declining targets for GHG emissions on the NHS. The FHWA is neither requiring any specific targets nor mandating any penalties for failing to achieve these targets. The measure and the associated targets are intended only to help State DOTs and MPOs consistently and transparently monitor the current performance of the NHS, and plan transportation projects in a way that protects the long-term performance of the NHS.

As described in the NPRM, *see* 87 FR 42408, Congress specifically directed FHWA to establish measures for States to use to assess the performance of the Interstate System and the non-Interstate NHS. *See* 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V). Although Congress did not define the meaning of performance under this provision, the statute identifies seven national goals to inform performance management. Environmental sustainability is one of the specifically identified goals, which is defined as “enhanc[ing] the performance of the transportation system while protecting and enhancing the natural environment.” 23 U.S.C. 150(b)(6). Congress directed FHWA to determine the nature and scope of the specific performance measures that will fulfill the statutory mandate in 23 U.S.C.

150(c), and has not clarified this authority even after FHWA finalized the three national performance management measure rulemakings described earlier. The FHWA notes that 23 U.S.C. 150(c)(2)(C) limits performance measures to those described in 23 U.S.C. 150(c). When FHWA repealed the GHG performance measure, the Agency took an unduly narrow view and determined that since 23 U.S.C. 150(c)(2)(C) directs FHWA to limit performance measures only to those described in 23 U.S.C. 150(c), FHWA’s previous interpretation that performance of the Interstate System and the National Highway System under 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V) includes environmental performance was overly broad. As FHWA described in the NPRM, *see* 87 FR 42408, this provision limits FHWA’s authority to establish measures States use to assess performance only to the Interstate System and the non-Interstate NHS. However, the provision does not otherwise limit the meaning of “performance,” and upon reconsideration, FHWA has determined that its original interpretation of the scope of its section 150(c) authority from the 2017 final rule is the better read of the statute. Specifically, in light of the explicit statutory goal of environmental sustainability, the significant risks that climate change-driven extreme weather pose to the condition and performance of NHS, and FHWA’s unquestioned authority to establish performance measures, FHWA believes that it is appropriate to interpret the meaning of performance of the Interstate System and the non-Interstate NHS under 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V) to include environmental performance.

As described in the NPRM and previously discussed in this preamble, this GHG measure is consistent with other parts of Title 23, U.S.C., notably 23 U.S.C. 119. Section 119(d)(1) of Title 23, U.S.C., establishes eligibility criteria for using funds apportioned to a State for carrying out the NHPP, but does not set forth all relevant considerations for carrying out the program. For example, 23 U.S.C. 119(d)(2) identifies purposes for eligible projects, including development and implementation of a State DOT’s asset management plan for the NHS under 23 U.S.C. 119(e), and environmental mitigation efforts related to projects funded under 23 U.S.C. 119(g). Section 119(e) calls for a performance-driven asset management plan that would “support progress toward the achievement of the national goals identified in Section 150(b)”,

which includes the environmental sustainability national goal under 23 U.S.C. 150(b)(6). Risk-based asset management planning under 23 U.S.C. 119(e) includes consideration of life-cycle costs and risk management, financial planning, and investment strategies. Rapidly changing climate and increased weather extremes because of fossil fuel combustion directly impact the condition and performance of transportation facilities because of increases in heavy precipitation, coastal flooding, heat, wildfires, and other extreme events. Extreme events are already leading to transportation challenges, inducing societal and economic consequences, which will only increase in the years ahead. The number of billion-dollar climate disaster events has been much higher over the last 5 years than the annual average over the last 30 years.⁵ Low-income and vulnerable populations are disproportionately affected by the impacts of climate change.⁶ These impacts are not attributable to any single action, but are exacerbated by a series of actions, including actions taken under the Federal-aid highway program. Recognizing the need to plan for and consider the risks of extreme weather, Congress amended the requirements for States' asset management plans under 23 U.S.C. 119(e) to include lifecycle cost and risk management analyses that specifically consider extreme weather and resilience. *See* 23 U.S.C. 119(e)(4)(D) (as amended by Pub. L. 117–58, sec. 11105). Measuring environmental performance through the GHG performance measure will assist States in considering CO₂ emissions from transportation in the performance management framework, including the impact of CO₂ emissions on the medium- and long-term conditions of transportation assets arising from the risks of, and costs related to extreme weather, and help frame responses to the growing climate crisis. Therefore, the GHG performance measure is appropriate in light of 23 U.S.C. 119, and FHWA has determined that the Agency's interpretation of

“performance” to include “environmental performance” is consistent with 23 U.S.C. 119.

As FHWA noted in the NPRM, several other provisions in Title 23, U.S.C., support FHWA's authority for its proposal to address GHG emissions in this rulemaking. To help conceptualize FHWA's framework for analyzing its authority under Title 23, U.S.C., this preamble restates these provisions as follows:

- In Section 101(b)(3)(G), Congress declared that “transportation should play a significant role in promoting economic growth, improving the environment, and sustaining the quality of life.”

- Section 134(a)(1) states as a matter of transportation planning policy that “[i]t is in the national interest to encourage and promote the safe and efficient management, operation, and development of surface transportation systems . . . while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes identified in this chapter.”

- Section 134(c)(1) requires MPOs to develop long range plans and transportation improvement programs to achieve the objectives in 23 U.S.C. 134(a)(1) through a performance-driven, outcome-based approach to planning.

- Section 134(h) defines the scope of the metropolitan planning process. Paragraphs (h)(1)(E) and (I), respectively, require consideration of projects and strategies that will “. . . protect and enhance the environment, promote energy conservation, improve the quality of life . . .” and “. . . improve the resiliency and reliability of the transportation system . . .”.

- Section 135(d)(1) defines the scope of the statewide planning process. Paragraphs (d)(1)(E) and (I), respectively, require consideration of projects, strategies, and services that will “. . . protect and enhance the environment, promote energy conservation, improve the quality of life . . .”, and “. . . improve the resiliency and reliability of the transportation system . . .”.

- Section 135(d)(2) requires the statewide transportation planning process to “. . . provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals described in Section 150(b) of this title . . .”.

The FHWA reaffirms that these Title 23, U.S.C., provisions make it clear that assessing infrastructure performance under 23 U.S.C. 150(c)(3) properly encompasses the assessment of

environmental performance, including GHG emissions and other climate-related matters. As noted in FHWA's May 2018 repeal of the 2017 GHG measure, nothing in the statute specifically requires FHWA to adopt a GHG emissions measure. However, consistent with the statutory provisions cited above, no provision of law prohibits FHWA from adopting a GHG emissions measure, despite ample opportunity for Congress to do so.

On November 15, 2021, President Biden signed the Infrastructure Investment and Jobs Act (IIJA) (Pub. L. 117–58, also known as the “Bipartisan Infrastructure Law”) (BIL) into law. The BIL does not explicitly direct FHWA to assess environmental performance. However, Congress set forth new programs and eligibilities under BIL that State DOTs and MPOs will use to address GHG emissions, and environmental performance will be central to proper administration of the programs. Thus, this GHG measure will help State DOTs and MPOs effectively use these new transportation dollars. For example, BIL authorized a new Carbon Reduction Program (CRP) codified at 23 U.S.C. 175. The CRP provides billions of dollars for Fiscal Years 2022–2026 for use on a range of projects that can demonstrate reductions in transportation emissions over the project's lifecycle. The CRP also requires State DOTs to develop a carbon reduction strategy in consultation with any MPO designated within the State to support efforts to reduce transportation emissions and identify projects and strategies to reduce these emissions. *See* 23 U.S.C. 175(d). Similarly, BIL included new language regarding national electric vehicle charging and hydrogen, propane, and natural gas fueling corridors to support changes in the transportation sector that help achieve a reduction in GHG emissions. *See* 23 U.S.C. 151. These programs are two examples of Congress' express focus on using transportation programs to reduce GHG emissions from transportation sources. The FHWA's GHG measure will help State DOTs and MPOs track the effectiveness of their transportation investments in projects that reduce GHG emissions, both through these programs and through other programs, such as the Surface Transportation Block Grant Program authorized at 23 U.S.C. 133.

The establishment of the GHG measure does not force investments in specific projects or strategies to reduce emissions, nor does it require the achievement of an absolute reduction target. However, FHWA has determined that the targets for the GHG measure

⁵ NOAA National Centers for Environmental Information (NCEI), 2022: U.S. Billion-Dollar Weather and Climate Disasters, available at <https://www.ncdc.noaa.gov/billions/>, DOI: 10.25921/stkw-7w73.

⁶ Ebi, K.L., J.M. Balbus, G. Luber, A. Bole, A. Crimmins, G. Glass, S. Saha, M.M. Shimamoto, J. Trtanj, and J.L. White-Newsome, 2018: Human Health. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 539–571. doi: 10.7930/NCA4.2018.CH14.

should show a reduction in CO₂ emissions. As discussed in response to comments in Section VII of this preamble, the establishment of declining targets is vital given the urgency of the climate crisis. Establishing declining targets will help State DOTs and MPOs plan toward reductions in GHG emissions and make Federal infrastructure investment decisions that reduce climate pollution, a principle set forth in E.O. 14008 (86 FR 7626). State DOTs and MPOs will set targets that indicate a reduction in CO₂ emissions, which FHWA has determined will be supportive of the policy goals set forth in 23 U.S.C. 150(b).

Although the rule requires declining targets for CO₂ emissions, FHWA is not setting forth any requirements in this rulemaking to determine how State DOTs and MPOs should determine their declining targets. In addition, as directed by 23 U.S.C. 145, States determine which of their projects shall be federally financed by Federal-aid highway formula dollars. State DOTs and MPOs will set and determine targets based on appropriate data as informed by State DOT and MPO policies and priorities. The FHWA is not prescribing what declining targets would look like in each State or MPO, and FHWA is not requiring State DOTs and MPOs to achieve targeted emission reductions, nor prescribing the selection of specific projects under this rulemaking. Thus, this approach is consistent with the Agency's authority under 23 U.S.C. 150(c) to establish measures for States to use to assess the performance of the Interstate and non-Interstate NHS in the furtherance of the national goal to enhance the performance of the transportation system while protecting and enhancing the natural environment.

In addition, adopting the measure for GHG emissions under 23 U.S.C. 150(c)(3) is appropriate in light of the structure of the TPM program. As discussed in the NPRM, Congress required FHWA to establish performance measures for a number of programs in addition to the NHPP, including an emissions related measure for the CMAQ Program under 23 U.S.C. 149. As discussed in the NPRM and in response to comments in Section VII of this preamble, the existence of the CMAQ emissions measure has raised questions regarding whether Congress intended FHWA to only measure emissions when those emissions are related to CMAQ, which is limited to criteria pollutants and nonattainment or maintenance areas under the Clean Air Act. However, this language only indicates congressional intent that

FHWA establish a performance measure for on-road mobile source emissions for the purposes of carrying out the CMAQ Program. Nothing in 23 U.S.C. 150 limits measures that take into account emissions only to measures established for the purposes of carrying out the CMAQ Program. The FHWA has determined that it is appropriate to examine relevant emissions as part of assessing performance of the Interstate and non-Interstate NHS in support of the NHPP.

For all of these reasons, FHWA asserts the GHG measure is consistent with FHWA's authority under 23 U.S.C. 150(c).

Reconsideration of Previous Actions

As discussed in Section II of this preamble, and detailed in Section III.C of the NPRM, FHWA has previously proposed and finalized actions related to a GHG measure. Specifically, FHWA previously finalized the PM₃ rule, through which the Agency considered extensive public comments on whether and how FHWA should establish a GHG measure. The FHWA determined that it was appropriate to measure environmental performance, specifically as the percent change in CO₂ emissions from the reference year 2017, generated by on-road mobile sources on the NHS (82 FR 5970). On October 5, 2017 (82 FR 46427), however, FHWA proposed to repeal the 2017 GHG measure. As discussed in more detail in the NPRM to this action, FHWA repealed the GHG measure on May 31, 2018 (83 FR 24920), in light of policy direction from the previous administration to review existing regulations to determine whether changes would be appropriate to eliminate duplicative regulations, reduce costs, and streamline regulatory processes, and after considering public comments received. The repeal was effective on July 2, 2018. The FHWA identified three main reasons for the repeal: (1) reconsideration of the underlying legal authority; (2) the cost of the GHG measure in relation to the lack of demonstrated benefits; and (3) potential duplication of information produced by the GHG measure and information produced by other initiatives related to measuring CO₂ emissions.

As part of this rulemaking, FHWA evaluated each of these rationales to examine whether they remain appropriate in light of current information. First, FHWA proposed, and now finalizes, that the Agency has reconsidered its interpretation of the statute. Consistent with the reasoning set forth in the PM₃ rule, FHWA believes adopting this measure under 23

U.S.C. 150(c) is appropriate in light of the Agency's authority under that section and based on the Agency's authority under Title 23, U.S.C. as a whole, as previously described in this section and detailed further in Section III.B of the NPRM. *See* 87 FR 42407–42410. Second, FHWA has determined that the benefits of the rulemaking, although difficult to quantify, are substantial and justify finalizing this action. In its 2022 NPRM, FHWA described how the substantial benefits of this regulation justified reconsidering and rejecting the Agency's conclusion in the 2018 final rule that the benefits of a GHG measure were too speculative and outweighed by the costs to justify retaining the measure as part of the TPM program. *See* 87 FR 42410–42411. The benefits and policy rationale for this regulation are further described in Section IV of this preamble. Third, and as discussed in the 2022 NPRM, *see* 87 FR 42411–42412, FHWA has determined that the information produced by the GHG measure is not duplicative in relation to information produced by other initiatives related to measuring CO₂ emissions, but rather complements that data to support a whole-of-government approach to addressing GHG emissions. The importance of this measure is further described in Section IV of this preamble.

FHWA adopts in full its analysis in the 2022 NPRM justifying the reconsideration and rejection of the conclusion from the 2018 final rule that 23 U.S.C. 150 did not provide FHWA with authority to measure the environmental performance of the NHS and adopt a GHG measure, and that the overall statutory scheme of Title 23, U.S.C. supported a narrower interpretation of performance of the NHS, and emphasizes some key points here. In the 2018 repeal, FHWA concluded that 23 U.S.C. 119(d)(1)(A) delineates the national goals that are relevant to eligibility of projects for funding under the NHPP, and the national goals included in section 119(d)(1)(A) are consistent with an interpretation of “performance” that focuses on the physical condition of the system and the efficiency of transportation operations across the system, rather than environmental performance. 83 FR 24923–24924. Upon reexamination of the statute, FHWA has determined that this previous interpretation was incorrect. Section 119(d)(1) of Title 23, U.S.C., establishes eligibility criteria for using funds apportioned to a State for carrying out the NHPP, but does not set forth all

relevant considerations for carrying out the program. Specifically, States are also required to establish asset management plans under 23 U.S.C. 119(e). These plans shall include strategies toward improving or preserving the condition of the assets and the performance of the system, including supporting progress toward the national goals in 23 U.S.C. 150(b). FHWA's previous interpretation ignored Congress's express direction for States to develop these plans for the NHS, which address both asset condition and system performance, and referenced all of the national goals in section 150(b), rather than a subset of goals such as the goals identified in 23 U.S.C. 119(d)(1). In addition, FHWA observes that 23 U.S.C. 119(d)(2) provides eligibility for projects under the NHPP that go beyond the limited subset of national goals listed in section 119(d)(1). The statute identifies eligible projects that support the national goal of environmental sustainability, such as environmental restoration and pollution abatement, control of noxious weeds and establishment of native species, and other environmental mitigation efforts. *See* 23 U.S.C. 119(d)(2)(M)–(O). When FHWA repealed the PM3 rule and determined that performance measures under 23 U.S.C. 150(c)(3) are limited to advancing the national goal in section 119(d)(1), the Agency did not appropriately consider the section 119(e) requirement to develop an asset management plan that supports achievement of *all* national goals in 23 U.S.C. 150(b), and eligibility for projects that support achieving environmental sustainability. In reexamining this authority, FHWA has determined that the Agency must consider the totality of 23 U.S.C. 150(b) when interpreting the meaning of performance on the Interstate and non-Interstate NHS and how performance is to be measured.

Additionally, FHWA has identified above several other provisions of Title 23, U.S.C., that support FHWA's proposal to address GHG emissions in this rulemaking and make it clear that assessing infrastructure performance under 23 U.S.C. 150(c)(3) properly encompasses the assessment of environmental performance, including GHG emissions. In the 2018 repeal final rule, FHWA considered these provisions irrelevant because they do not "specifically direct[] or require[] FHWA to adopt a GHG measure." 83 FR at 24923. However, these provisions do not prohibit FHWA from adopting a GHG measure—nor does any other provision in Title 23—and by stating the importance of protecting the environment and improving the

resiliency of the transportation system, including through the use of performance management, these provisions clearly support the use of a GHG measure to assess the environmental performance of the NHS. As discussed above, the passage of BIL added additional programs and eligibilities to Title 23, and the administration of these programs will greatly benefit from the measurement of the environmental performance, including measurement of GHG emissions on the NHS. FHWA believes that these provisions of Title 23, including those added after the 2018 repeal of the GHG measure, serve to underscore the importance of reestablishing the GHG measure.

As discussed in the preamble to the NPRM, FHWA acknowledges that this action largely reestablishes a measure similar to the measure finalized in 2017 and repealed in 2018. *See* 83 FR 24920. However, as discussed in the preamble to the NPRM, FHWA expects that States and MPOs have no reliance interests resulting from establishment and the repeal of the 2017 GHG measure. *See* 87 FR 42410. The FHWA repealed the 2017 GHG measure before the respective due dates for target setting or reporting, and FHWA is unaware of any State DOTs or MPOs that incurred costs because of the promulgation and prompt repeal of that measure. Nor did the repeal itself impose any compliance costs on State DOTs or MPOs. Accordingly, FHWA does not expect this final rule to result in any increased burden on State DOTs or MPOs by virtue of the fact that FHWA previously established a similar measure that was repealed before any State DOTs or MPOs relied on and implemented its target setting and reporting requirements. This measure is a new one, which State DOTs and MPOs have not previously implemented. As a result, FHWA expects that States and MPOs would not have any reliance interests based on the repeal of the 2017 GHG measure. After reviewing the comments on the proposal, FHWA reaffirms that any potential reliance interest would be outweighed by the benefits of this action, to the extent those interests exist.

IV. Basis & Benefits of These Regulations

The FHWA believes that the performance management requirements are a powerful tool for achieving all seven of the statutory national transportation goals, including the Federal-aid highway program's national goal for environmental sustainability identified under 23 U.S.C. 150(b)(6), and establishing a GHG measure in

FHWA's TPM Program will provide a consistent basis for addressing the environmental sustainability of the transportation system and estimating on-road GHG emissions. In addition, the GHG measure will result in a consistent set of data that can be used to inform the future investment decisions of the Federal Government, State DOTs, and MPOs towards achieving their targets or goals.

By establishing the GHG performance measure, FHWA is taking action to address the largest source of U.S. CO₂ emissions. In 2021, the transportation sector accounted for 34.8 percent of total U.S. CO₂ emissions, with 82.7 percent of the sector's total CO₂ emissions coming from on-road sources.⁷ The transportation sector is expected to remain the largest source of U.S. CO₂ emissions through 2050, increasing at an average annual rate of 0.3 percent per year despite improvements in the energy efficiency of light-duty vehicles, trucks, and aircraft.⁸ Factors such as population growth, expansion of urban centers, a growing economy, and increased international trade are expected to result in growing passenger and freight movement. These changes can make GHG reductions and environmental sustainability both more challenging to implement and more important to achieve.⁹

In addition to being the largest source of U.S. CO₂ emissions,¹⁰ the transportation sector is increasingly vulnerable to the effects of climate change including higher temperatures, more frequent and intense precipitation, and sea level rise. Much of existing transportation infrastructure was designed and constructed without consideration of these changes. The Sixth Assessment Report by the IPCC, released on August 7, 2021, confirms that human activities are increasing GHG concentrations that have warmed

⁷ U.S. Environmental Protection Agency, 2023: Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2021, available at <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021>.

⁸ U.S. Energy Information Administration, 2021: Annual Energy Outlook 2021, available at https://www.eia.gov/outlooks/aeo/tables_ref.php.

⁹ Jacobs, J.M., M. Culp, L. Cattaneo, P. Chinowsky, A. Choate, S. DesRoches, S. Douglass, and R. Miller, 2018: Transportation. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 479–511. doi: 10.7930/NCA4.2018.CH12, available at <https://nca2018.globalchange.gov/chapter/12/>.

¹⁰ See EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990–2021, at 2–28.

the atmosphere, ocean, and land at a rate that is unprecedented in at least the last 2000 years.¹¹ According to the report, global mean sea level has increased between 1901 and 2018, and changes in extreme events such as heatwaves, heavy precipitation, hurricanes, wildfires, and droughts have intensified since the last assessment report in 2014.¹² These changes in extreme events, along with anticipated future changes in these events because of climate change, threaten the reliability, safety and efficiency of the transportation system. At the same time, transportation contributes significantly to the causes of climate change¹³ and each additional ton of CO₂ produced by the combustion of fossil fuels contributes to future warming and other climate impacts.

The first step toward reducing GHG emissions involves inventorying and monitoring those emissions. By establishing a consistent method for estimating GHG emissions and reporting on trends, the GHG measure aligns with E.O. 13990, E.O. 14008, and supports a U.S. target of reducing GHG emissions economy-wide 50 to 52 percent below 2005 by 2030, on a course toward reaching net-zero emissions economywide by no later than 2050.¹⁴

¹¹ See IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, available at <https://www.ipcc.ch/report/ar6/wg1/#SPM>.

¹² IPCC, 2021: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Pe'an, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press.

¹³ Jacobs, J.M., M. Culp, L. Cattaneo, P. Chinowsky, A. Choate, S. DesRoches, S. Douglass, and R. Miller, 2018: Transportation. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 479–511. doi:10.7930/NCA4.2018.CH12.

¹⁴ White House Fact Sheet: The Biden-Harris Electric Vehicle Charging Action Plan (December 13, 2021), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/13/fact-sheet-the-biden-harris-electric-vehicle-charging-action-plan/>; White House Fact Sheet: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies (Apr. 22, 2021), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/>; White House Fact Sheet: President Biden's Leaders Summit on

Section 1 of E.O. 13990, “Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis,” (86 FR 7037), articulates national policy objectives, including listening to the science, improving public health and protecting the environment, reducing GHG emissions, and strengthening resilience to the impacts of climate change. The E.O. 14008, “Tackling the Climate Crisis at Home and Abroad,” (86 FR 7619), recommit the U.S. to the Paris Agreement and calls on the U.S. to begin the process of developing its nationally determined contribution to global GHG reductions. See E.O. 14008, § 102. The E.O. 14008 also calls for a government-wide approach to the climate crisis and acknowledges opportunities to create well-paying, union jobs to build a modern, sustainable infrastructure, to provide an equitable, clean energy future, and to put the U.S. on a path to achieve net-zero emissions, economywide, no later than 2050. See *id.*, § 201.

As a matter of transportation policy, FHWA considers the GHG measure essential not only to improve transportation sector performance and work toward achieving net-zero emissions economy-wide by 2050, but also to demonstrate Federal leadership in the assessment and disclosure of climate pollution from the transportation sector. Measuring and reporting complete, consistent, and timely information for on-road mobile source emissions is necessary so that all levels of government and the public can monitor changes in GHG emissions over time and make more informed decisions about the role of transportation investments and other strategies in achieving GHG reductions.

After reviewing the comments provided on the NPRM, FHWA has decided to finalize the measure proposed in the NPRM, which is the percent change in tailpipe CO₂ emissions on the NHS relative to the reference year. In choosing this measure, FHWA considered the measure's sensitivity to strategies and policies of interest to transportation agencies, as well as its simplicity, ease of calculation, and reliance on data States already report to FHWA. In particular, the GHG measure will utilize fuel use estimates collected by FHWA very shortly after these data are finalized, providing a consistent and timely data source that is better suited

Climate (Apr. 23, 2021), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/23/fact-sheet-president-bidens-leaders-summit-on-climate/>.

for setting targets and monitoring trends in mobile source CO₂ emissions on the NHS. As a new source of information, the measure has the potential to result in greater public awareness of GHG emissions trends, provide increased transparency and improved decisionmaking at all levels of government, and support better informed planning choices to reduce GHG emissions or inform tradeoffs among competing policy choices. In these capacities, the proposed GHG measure is integral to a whole-of-government approach to address climate change and its effects.

V. Summary of Comments

The FHWA received 39,751 submissions to the docket, including 39,522 from 7 comment campaigns, in response to the NPRM, resulting in 236 unique submissions containing 999 individual comments. The submissions were signed by 105,484 separate groups/individuals. The FHWA received comments from 98 advocacy and interest groups (including advocacy groups for active transportation and public transit, the natural environment, climate change action, clean air, and equity/environmental justice, among others), 31 State DOTs and the District of Columbia DOT, 33 State Attorneys General, one State Governor, 33 MPOs, two State environmental agencies, 10 County/Local government agencies, as well as 57 U.S. Senators from 38 states and 56 U.S. Representatives from 25 states. The FHWA also received comments from 24 industry associations (including the American Association of State Highway Transportation Officials (AASHTO), the Association of Metropolitan Planning Organizations (AMPO), and the American Public Transportation Association (APTA), as well as those representing highway and transportation users, roadway materials producers and roadway builders, and energy companies, among others). The FHWA also received comments from over 104,500 private citizens, the majority of which were submitted as part of comment campaigns.

VI. Summary of Changes Made in This Final Rule

This section provides a summary of the changes made in the rule compared to the NPRM. Section VII provides further discussion on the significant changes and the reasons they were made.

A. Reference Year

In the final rule, FHWA establishes that 2022 will be the reference year for this measure. The FHWA has changed

the definition in 23 CFR 490.505 and updated the calculation of the measure in 23 CFR 490.513(d)¹⁵ accordingly.

B. Net-Zero

The definition of net-zero was removed from 23 CFR 490.101, and 23 CFR 490.105(e)(10) was revised so targets must be declining for reducing tailpipe CO₂ emissions on the NHS, but they are not required to demonstrate reductions toward net-zero targets.

C. State DOT Targets & Reports

In the final rule, FHWA establishes that State DOTs will establish initial targets for the GHG measure and report them no later than February 1, 2024. 23 CFR 490.105(e)(1) and 490.107(d). The February 1, 2024, date required changes to several sections of existing regulation. Below is a general summary of the initial target establishment requirements, the reporting process for the State Initial GHG Report due February 1, 2024, and the significant progress determinations that will be completed after the State biennial reports submitted by October 1, 2024, and 2026.

State DOT Target Establishment & Reporting Related to February 1, 2024

The performance period for the GHG measure will begin January 1, 2022 and extend 4 years. 23 CFR 490.105(e)(1). By February 1, 2024, State DOTs will establish initial targets for the GHG measure. 23 CFR 490.105(e)(1)(ii). Initially, State DOTs will establish 4-year targets; 2-year targets will not be established. 23 CFR 490.105(e)(1), 490.105(e)(4)(iii), and 490.105(e)(10)(i). For the initial 4-year target, the reference year will be used as the baseline. 23 CFR 490.105(e)(10)(i)(C).

State DOTs will report their 4-year targets to FHWA in the State Initial GHG Report by no later than February 1, 2024. 23 CFR 490.107(d). The State Initial GHG Report shall include the State DOT's 4-year target for the GHG measure, the basis for the target, a discussion of how the target relates to other longer-term performance expectations, and the metric information for the reference year. 23 CFR 490.107(d)(1). The metric reported will be calculated using the data specified in 23 CFR 490.107(d)(2). Because of the 2024 State Initial GHG Report, State DOTs will not include additional GHG information in the 2024 Mid Performance Period Progress Report, due October 1, 2024. 23 CFR 490.107(b)(2)(i). Biennial reporting

related to the GHG measure will begin with the 2026 Full Performance Period Progress Report and the 2026 Baseline Performance Period Report. 23 CFR 490.107(b)(1)(i), 490.107(b)(2)(i), and 490.107(b)(3)(i).

Significant Progress Determination on Initial Targets

After the 2026 Full Performance Period Progress Report, FHWA will determine whether a State DOT has made significant progress toward the achievement of the 4-year target for the GHG measure. The FHWA will use the data described in 23 CFR 490.109(d)(1) when calculating the actual performance and making the significant progress determination. The performance for the reference year will be used as the baseline performance in the 2026 significant progress determination. 23 CFR 490.105(e)(10)(i)(C).

The significant progress determination requirements related to the GHG measure will be phased in as described in 23 CFR 490.109(e)(6). The FHWA will not determine significant progress toward 2-year targets for this measure after the 2024 Mid Performance Period Progress Report since 2-year targets will not have been established, and information related to the GHG measure will not have been included in the 2024 Mid Performance Period Progress Report. Therefore, in 2024, FHWA will classify the assessment of progress toward the achievement of 2-year targets for the GHG measure as "progress not determined" and they will not be subject to any additional reporting requirements. 23 CFR 490.109(e)(6).

Biennial Reporting

FHWA revised proposed changes to section 490.107(b)(1), (b)(2), and (b)(3) to require biennial reporting related to the GHG measure to begin with the 2026 Full Performance Period Progress Report. And, consistent with 23 CFR 490.105(e)(5), the State DOT's 2- and 4-year targets will be reported in the 2026 Baseline Performance Period Report. See the discussion under "State DOT Data for the GHG Metric Calculation" for more information on the State DOT biennial reporting associated with the GHG metric.

D. State DOT Data for the GHG Metric Calculation

State DOTs are required to calculate and report both the GHG measure and the GHG metric, the latter of which is defined as the calculation of tailpipe CO₂ emissions on the NHS for a given year computed in million metric tons

(mmt) and round to the nearest hundredth. 23 CFR 490.511(c). State DOTs use the metric to calculate the measure, which is the percent change between the current year and the reference year. To calculate the metric, State DOTs require several data inputs, and they are defined in 23 CFR 490.511(c). To ensure consistent calculation of the metric, the data requirements are defined in 23 CFR 490.509. To provide transparency and consistency, FHWA defines the specific data sources it will use when it calculates the metric and measure for the significant progress determination in 23 CFR 490.109(d).

In this final rule, proposed 23 CFR 490.509(h) was revised so that the State DOT will be able to use their best available vehicle miles traveled (VMT) data when establishing targets, reporting baseline and actual performance and discussing progress. This change addresses a comment that stated VMT data might not be finalized within the Highway Performance Monitoring System (HPMS) for all States by August 15th. The VMT data used by State DOTs will represent the prior calendar year and should be consistent with the final VMT data submitted by the State DOT to HPMS, to the maximum extent practicable. 23 CFR 490.509(h). The HPMS data as of November 30, 2023, will be used to calculate the metric for the reference year. 23 CFR 490.509(h).

Because FHWA will not necessarily have the VMT data the State DOT used, the biennial reporting requirements in proposed 23 CFR 490.107(b)(1)(ii)(H), (b)(2)(ii)(J), and (b)(3)(ii)(I) were revised in this final rule to require the State DOT to report the GHG metric value they calculated, the individual values used to calculate the GHG metric, and a description of the data source(s) used for the VMT information. This final rule removes the proposed requirement for the State DOT to report CO₂ emissions on all public roads as part of reporting the metric information since the values used to calculate the GHG metric can be used to calculate the all-roads value. A corresponding change was made to 23 CFR 490.511(f)(2) to align with the metric reporting requirements in the State DOT's biennial reports.

Section 490.109(d)(1)(vi) and (d)(1)(vii) were revised to require the significant progress determination to calculate the GHG metric and measure for the baseline and actual performance using the HPMS data available on November 30th of the year the significant progress determination is made. For the reference year, FHWA will use the HPMS data as of November 30, 2023. 23 CFR 490.109(d)(1)(vi)–(vii).

¹⁵ In this section, the citations to 23 CFR part 490 refer to provisions as amended by this final rule.

Section 490.109(d)(1)(viii) was added to specify that the significant progress determination will use the CO₂ factors specified in section 490.509(f).

In the final rule, FHWA has added the requirement for State DOTs to submit the State Initial GHG Report, as described in VI.C. For that report, the State DOT will use the data specified in 23 CFR 490.107(d)(2) to calculate the metric.

Please note, 23 CFR 490.511 includes different requirements for State DOTs and MPOs when calculating the metric used to calculate the GHG measure. The State DOT's method is defined in 23 CFR 490.511(c) and the method will be the same for all states. The MPOs are granted flexibility in how they calculate the metric, as described in 23 CFR 490.511(d). This section only discusses the changes made in the final rule in relation to the data the State DOT will use when calculating the GHG metric. The changes made related to the MPO

metric requirements are summarized below in Section VI.E.

E. Initial MPO Targets & Reports

The final rule, in 23 CFR 490.511(d), retains the additional flexibility granted to MPOs in how they calculate the GHG metric. The final rule removes the proposed requirement for MPOs and State DOTs to mutually agree upon a method for calculating the metric, and instead requires MPOs to report a description of their metric calculation method(s). When that method is not one of the ones specified in 23 CFR 490.511(d), the MPO will include information demonstrating the method(s) has valid and useful results for measuring transportation related CO₂. 23 CFR 490.107(c)(2)(ii). While MPOs are not required to select a metric calculation in coordination with their State DOT, they are encouraged to coordinate with the State DOT on the data used to the maximum extent practicable.

The final rule removes the proposed requirement for the MPO to report CO₂ emissions on all public roads.

F. Severability

The final rule adds a new section 23 CFR 490.515 that contains a severability clause applicable to the amendments to 23 CFR part 490 made by this final rule. FHWA believes that the amendments to part 490, including establishment and calculation of the GHG performance measure and declining targets, are capable of operating independently of one another. If one or more aspects of the GHG measure are determined to be invalid, the remaining provisions should remain unaffected and in force.

G. Other Changes

The final rule contains several technical changes from the proposed rule. These changes are described in Table 1.

TABLE 1—TECHNICAL EDITS TO THE FINAL RULE

CFR section	Description of change
23 CFR 490.101	Corrects the abbreviated name for the <i>Fuels and Financial Analysis System—Highways</i> (Fuels & FASH) database. Corresponding changes were made throughout the rule.
23 CFR 490.105(c)(5)	Clarifies language describing the GHG measure.
23 CFR 490.105(d)(4)	Clarifies the applicability of the joint targets.
23 CFR 490.105(e)(4)(i)(C)	Moves information about the performance period from the location proposed in the NPRM to here to align with references to the performance period throughout 23 CFR part 490.
23 CFR 490.105(f)(10)	Clarifies rule language.
23 CFR 490.107(a)(1)	Updates language to capture the edition of Section 490.107(d) in the final rule.
23 CFR 490.107(c)(2)	Revises the structure and organization of the paragraph to improve readability.
23 CFR 490.109(d)(1)(v) and (d)(1)(vii)	Clarifies that the reference year data will not be updated each time the data for the previous year is compiled.
23 CFR 490.109(d)(1)(viii)	Clarifies that the CO ₂ factor specified in Section 490.509(f) will be used.
23 CFR 490.109(e)(4)(vi)	Substitutes “accepted” instead of “cleared.”
23 CFR 490.109(e)(4)(vii)	Adds the HPMS data extraction date. Listing this date is consistent with Section 490.109(e)(4)(vi) and does not change the intended approach.
23 CFR 490.109(f)(1)(v)	Revises rule language to use consistent terminology.
23 CFR 490.505	Clarifies that approximately 97 percent of on-road tailpipe GHG emissions are CO ₂ .
23 CFR 490.509(f)	Clarifies rule language.
23 CFR 490.509(f)(2)	Revises rule language to use consistent terminology.

VII. Section-by-Section Discussion

This final rule was developed in response to comments received on the NPRM. Section VII summarizes major comments received and any substantive changes made to each section in this final rule. Editorial or minor changes in language are not addressed in this section. For sections where no substantive changes are discussed, the substantive proposal from the NPRM has been adopted in this final rule.

Questions Posed in the NPRM

The FHWA requested comment on a number of items in the NPRM. The

FHWA invited comments on the following:

- How should FHWA structure improving targets for the GHG measure, as well as the associated reporting and significant progress requirements, and how could these targets align with and inform existing transportation planning and programming processes?
- Besides requiring targets that reduce GHGs over time, are there any specific ways the proposed GHG measure could be implemented within the framework of TPM to better support emissions reductions to achieve national policies for reductions in total U.S. GHG emissions?

• What changes to the proposed measure or its implementation in TPM could better the impact of transportation decisions on CO₂ emissions, and enable States to achieve tailpipe CO₂ emissions reductions necessary to achieve national targets?

• In instances that MPOs are establishing a joint UZA target, should FHWA require that the individual MPO-wide targets be the same as the jointly established UZA target?

• Should MPOs that establish a joint UZA target be exempt from establishing individual MPO-level targets, and instead only be required to adopt and support the joint UZA target?

- In cases where there are multiple MPOs with boundaries that overlap any portion of an UZA, and that UZA contains NHS mileage, should each of those MPOs establish their own targets, with no requirement for a joint UZA target?

- Are there other approaches to target setting in UZAs served by multiple MPOs that would better help MPOs reach net-zero emissions?

The FHWA also requested comment on assumptions that were developed as part of the RIA, as well as information on other benefits or costs that would result from implementation of the rule, as follows:

- The RIA includes assumptions regarding the applicability, level of effort and frequency of activities under proposed 23 CFR 490.105, 490.107, 490.109, 490.511, and 490.513. Are these assumptions reasonable? Are there circumstances that may result in greater or lesser burden relative to the RIA assumptions?

- Would the staff time spent implementing this measure reduce the burden of carrying out other aspects of State DOT and MPO missions, such as forecasting fuel tax revenues? If so, please describe and provide any information on programs that would benefit from this measure and estimate any costs that would be reduced by implementing this measure.

- Would the proposed rule result in economies of scale or other efficiencies, such as the development of consulting services or specialized tools that would lower the cost of implementation? If so, please describe such efficiencies and provide any information on potential cost savings.

- Would the proposed rule result in the qualitative benefits identified in the RIA, including more informed decisionmaking, greater accountability, and progress on National Transportation Goals identified in MAP-21? Would the proposed rule result in other benefits or costs? Would the proposed measure change transportation investment decisions and if so, in what ways? For State DOTs and MPOs that have already implemented their own GHG measure(s), FHWA welcomes information on the impact and effectiveness of their GHG emissions measure(s).

The FHWA received many comments on these items, and thanks commenters for their useful input. The FHWA considered these comments in developing this final rule and responds to significant adverse comments related to these questions and other comments in the following section.

General Comments

FHWA's Legal Justification for the GHG Measure

Comment: A large number of commenters addressed FHWA's legal authority for this measure. Many commenters affirmed FHWA's legal authority to establish the measure under 23 U.S.C. 150. These commenters note that under MAP-21, FHWA is required to establish "performance" measures to assess performance of the Interstate and non-Interstate NHS, *see* 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V), and FHWA's interpretation of "performance" to include environmental performance is consistent with the express statutory goals of the Federal-aid highway program, which include environmental sustainability under 23 U.S.C. 150(b)(6). In contrast, many commenters disputed FHWA's legal authority to establish the proposed measure. Several commenters stated that, contrary to FHWA's statements, this action will in fact set performance targets for the States and MPOs by requiring State DOTs and MPOs with NHS mileage to establish declining CO₂ emissions targets that align with the Administration's net-zero targets, while FHWA's authority is limited to establishing measures for States to use to measure performance. These commenters largely characterized the measure as a requirement that State DOTs and MPOs reduce GHG emissions. Notably, a large number of commenters stated that FHWA does not have the authority to regulate GHGs, as Congress has not assigned such authority to the Agency, and such authority would be more appropriately assigned to the Environmental Protection Agency (EPA). Similarly, several commenters claim that FHWA should not focus on regulating GHGs, and instead should work with the EPA to reduce CO₂ emissions. A commenter also asserted that the proposed rule inappropriately seeks to rebalance Congress's funding priorities.

Response: As discussed in Section III of this preamble, FHWA affirms that the Agency has the requisite statutory authority to adopt the GHG measure. A significant number of commenters questioning FHWA's authority to adopt the GHG measure have mischaracterized this rulemaking. The FHWA is not regulating GHG emissions via this measure, is not mandating any reductions, is not forcing States to select specific projects, and is not asserting authority through this rulemaking over GHG emissions from the transportation sector. Rather, this measure is designed to provide State DOTs and MPOs with the information necessary to make

informed transportation decisions. Although FHWA is requiring that State DOTs and MPOs set targets—consistent with the rest of the TPM program—FHWA is not mandating specific targets and is not setting those targets for State DOTs and MPOs. The FHWA is also neither approving nor disapproving individual targets. Thus, FHWA is applying the Agency's authority under 23 U.S.C. 150(c) and is not extending beyond that authority. However, upon examining comments and the preamble to the NPRM, FHWA recognizes that the language regarding aligning with net-zero targets could be clarified to better indicate FHWA's intent. Therefore, FHWA is clarifying that the Agency is not requiring that declining targets align to the Administration's net-zero targets as outlined in the national policy established under E.O. 14008. Rather, FHWA recommends that State DOTs and MPOs consider the Administration's targets when setting their declining targets.

Comment: Several commenters asserted that FHWA has not sufficiently justified changing its approach. Commenters assert that FHWA is merely reinstating a previous action and is changing the Agency's position based on policy preferences provided in E.O.s rather than technical expertise, such as by stating that the emissions measure would result in substantial benefits, while also stating that the benefits are not easily quantifiable. Several commenters assert that FHWA has failed to adequately justify this measure by relying on general reports on CO₂ emissions and climate change harms. In addition, commenters asserted that FHWA may not merely reexamine previous assertions in rulemakings and must instead provide technical analysis in support of the rulemaking. Commenters asserted that FHWA failed to consider whether declining targets will interfere with other statutory schemes by encouraging States to adopt electric vehicles to reduce GHGs while not focusing on reducing criteria pollutants under CMAQ. In addition, commenters assert FHWA failed to consider whether the rulemaking will disadvantage States with a range of different conditions, such as extreme climates and freight traffic.

Response: The FHWA disagrees with these commenters' assertions. The FHWA has reexamined the rationale for the 2018 repeal and has determined that FHWA has the authority to adopt this GHG measure and has provided updated analyses identifying why the GHG measure is appropriate and reasonable in light of FHWA's statutory mandate to adopt performance measures. The

FHWA's legal authority, technical justification, and reasoned analysis for this measure are detailed in the NPRM and in Sections III. and IV. of this preamble. FHWA has acknowledged that it is changing the position the Agency put forward in the 2018 repeal final rule and provided detailed legal, technical, and policy reasons for doing so. Commenters' assertion that FHWA must do more to justify changing its approach has no basis in law. *See FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515–16 (2009). The FHWA also disagrees with the commenters' assertions about FHWA's failure to consider whether declining targets will disadvantage States or cause any potential harm through the adoption of electric vehicles. These comments are predicated on a misconception that FHWA is requiring any specific behavior by State DOTs and MPOs to reduce GHG emissions. The FHWA is not mandating reductions, and this rulemaking does not require or purport to require State DOTs or MPOs to select GHG reducing projects. Rather, State DOTs and MPOs will determine appropriate declining targets based on the conditions relevant to the State DOTs and MPOs. The FHWA expects—but does not require—that this measure will help State DOTs and MPOs select projects that will reduce GHG emissions.

Comment: Several commenters assert that FHWA lacks the authority to adopt the GHG measure based on the recent decision of *West Virginia v. EPA*, 142 S. Ct. 2587 (2022), related to the Major Questions Doctrine.

Response: The FHWA disagrees with the assertion that this measure is inconsistent with recent Supreme Court precedent. This rulemaking is not an extraordinary case. It does not involve a novel interpretation of longstanding FHWA authority, nor does it represent an unheralded assertion of regulatory authority with the significant economic and political impacts that implicate a major questions case under *West Virginia v. EPA*. The FHWA's approach is in line with FHWA's prior requirements for performance measures related to the national goals in 23 U.S.C. 150(b). This rulemaking also does not require State DOTs and MPOs to change their approach to selecting projects. Rather, the measure will provide them with additional information to inform their decisionmaking. As described in the RIA, this rulemaking has minimal costs for State DOTs and MPOs. Additionally, there is clear congressional authorization to establish performance measures under 23 U.S.C. 150(c). Contrary to inaccurate

statements made by commenters, FHWA is not regulating GHG emissions, but rather is setting forth an approach by which to measure GHG emissions related to transportation on the Interstate System and non-Interstate NHS, using publicly available data, which States and MPOs can use to make better-informed transportation investment decisions. Therefore, FHWA disagrees with the commenters' assertions related to the Major Questions Doctrine.

Comment: A number of commenters stated that FHWA does not have the authority to issue this GHG measure under 23 U.S.C. 150(c) because the statute limits performance measures only to those described in that subsection.

Response: As described in the NPRM and discussed in Section III of this preamble, FHWA has reconsidered its previous interpretation that this provision limits FHWA's authority to establish measures States use to assess performance on the NHS to measures that focus on the physical condition of the system and the efficiency of transportation operations across the system. FHWA now concludes that 23 U.S.C. 150(c) limits FHWA to establishing measures to carry out 23 U.S.C. 119 to measures that assess performance on the Interstate System and the NHS. However, the provision does not otherwise limit the meaning of "performance." Thus, FHWA has concluded that the "performance" of the Interstate and non-Interstate NHS includes environmental performance, and FHWA disagrees with the commenters' conclusion that FHWA does not have authority to adopt this GHG measure.

Comment: Commenters noted that although FHWA is not proposing any penalties, FHWA would be able to influence the selection of projects by States that rely on formula funds that Congress requires FHWA to distribute to States.

Response: The FHWA did not propose, and is not finalizing, any requirements for specific use of funds related to the GHG measure. The measure and the associated targets established through the final rule are intended to help State DOTs and MPOs consistently and transparently monitor the current performance of the NHS, and plan transportation projects in a way that protects the long-term performance of the NHS. The final rule does not direct any action on the part of the State DOT or MPO with respect to selecting projects under the Federal-aid highway program. As per 23 U.S.C. 145, State DOTs determine which eligible

projects are federally funded, and FHWA reaffirms that nothing in this final rule should be construed to affect that bedrock principle. Therefore, FHWA disagrees with the commenters' assertion that FHWA may influence project selection through this measure.

Comment: Commenters note that BIL did not provide FHWA with new authority to regulate GHGs, but rather BIL established new programs to incentivize and reward State DOTs and MPOs for implementing emissions reduction strategies. Commenters also note that BIL and the Inflation Reduction Act (IRA) (Pub. L. 117–169) did not authorize FHWA to mandate GHG performance targets that States would be required to meet. One commenter asserts that the legislative history of BIL indicates that Congress considered but did not pursue climate change policy for FHWA. Commenters assert that Congress specifically chose not to address GHG emissions under 23 U.S.C. 150(c), and thus FHWA lacks authority to issue this measure. Commenters also assert that since Congress addressed GHG emissions in programs like the CRP under 23 U.S.C. 175 but did not add them to the performance measures in 23 U.S.C. 150(c), Congress intended to set performance measures for some programs and not set performance measures for other programs.

Response: As described in Section III of this preamble, FHWA's authority for this measure arises under 23 U.S.C. 150(c), and FHWA's interpretation of that authority is informed in part by new changes from BIL. Additionally, FHWA did not propose—and is not finalizing—any FHWA-mandated performance targets that States would be required to meet. The BIL contains a number of programs that aim to reduce GHG emissions from transportation sources, and collection and analysis of the GHG measure can support implementation of those programs. However, FHWA did not propose, and is not finalizing, any requirements related to those programs. In addition, FHWA disagrees with the assertion that BIL does not address climate change. As discussed in this preamble, there are a number of GHG emissions-related provisions in BIL, such as those found in division A, title I, subtitle D, titled "Climate Change." These provisions include both the CRP under 23 U.S.C. 175 and the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) program under 23 U.S.C. 176. The FHWA recognizes that these programs do not mandate reductions in GHG emissions, and as such, FHWA

does not assert authority over GHG emissions. However, FHWA disagrees with the commenters regarding congressional intent as related to the measurement of GHGs under 23 U.S.C. 150(c). Congress did not provide exact parameters for performance measures under 23 U.S.C. 150(c), and it did not clarify, let alone impose restrictions on, these parameters in BIL. Rather, FHWA must—based on the Agency’s expertise—determine how to structure performance measures. As described in this preamble and in the preamble to the 2022 NPRM, FHWA has determined that measuring environmental performance is vital to assessing performance on the Interstate and non-Interstate NHS.

In addition, FHWA disagrees with the commenters’ assertion that Congress’s designation of mandatory performance measures for some programs but not others prohibits FHWA from exercising Agency expertise to define performance of the Interstate and non-Interstate NHS. Although Congress did not include a specific performance measure for GHG-related programs in enacting 23 U.S.C. 150, Congress also decided not to define performance under 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V) and, in the decade since enactment of MAP–21, Congress has not qualified FHWA’s authority to define performance on the NHS, even after FHWA promulgated a GHG measure in the PM3 rule. For the same reasons, FHWA also disagrees with the commenters’ statements regarding legislative history of BIL and IRA, and in particular, the significance that can be attributed to GHG and environmental performance-related language not being included in the enacted legislation. By itself, congressional inaction on a subject is an unreliable indicator of legislative intent because “several equally tenable inferences may be drawn from such inaction, including the inference that the existing legislation already incorporated the offered change.” *Pension Benefit Guaranty Corp. v. LTV Corp.*, 496 U.S. 633, 650 (1990) (quoting *United States v. Wise*, 370 U.S. 405, 411 (1962)) (internal quotation marks omitted). In this instance, there is no contemporaneous legislative record to explain why language relating to measuring GHG emissions with respect to performance of the NHS was not included in BIL. Moreover, BIL was passed long after the PM3 rulemaking was proposed and finalized. If anything, the fact that Congress was aware of FHWA’s prior action to promulgate a GHG performance measure and did not use the opportunity in BIL to amend existing statutory language on

performance measures or the definition of performance on the NHS more likely indicates that Congress intended to leave such determinations to Agency expertise to be handled via regulatory authority. *See id.* Therefore, FHWA rejects the commenters’ interpretation of congressional intent to restrict FHWA’s authority to establish measures to assess performance of the NHS.

Comment: Commenters disagreed with FHWA’s approach to supporting resilience through this measure. Commenters assert that both the NHPP under 23 U.S.C. 119 and BIL are focused on the physical condition of the highway system, and FHWA must focus on addressing physical issues with the roads, rather than CO₂ emissions. Commenters assert that, likewise, resilience deals with impacts on the transportation system, rather than impacts from emissions from the transportation system. Commenters also contend that CO₂ regulation is the purview of the EPA, not FHWA.

Response: The FHWA disagrees with the commenters’ limited view of 23 U.S.C. 119’s substantial focus on resilience and their characterization of FHWA’s action to establish the GHG measure. As discussed in section III above, the NHPP is not solely focused on the physical performance of highways. For example, the requirements for State asset management plans include strategies supporting the progress toward the achievement of all national goals identified in 23 U.S.C. 150(b), including the goal to enhance the performance of the transportation system while protecting and enhancing the natural environment at 23 U.S.C. 150(b)(6). *See* 23 U.S.C. 119(e)(2). In addition, the BIL amended the requirements for asset management plans’ lifecycle cost and risk management analyses so that they now must specifically take into consideration extreme weather and resilience. *See* 23 U.S.C. 119(e)(4)(D). In explicitly stating that both the purpose of the NHPP under 23 U.S.C. 119 is to increase the resiliency of the NHS and that environmental sustainability is an express national goal of the Federal-aid highway program under 23 U.S.C. 150(b), Congress clearly spoke to the importance of addressing environmental impacts related to the transportation system. Assessing environmental performance will support State and MPO efforts to increase the resiliency of the NHS to mitigate the cost of damages from sea level rise, extreme weather events, flooding, wildfires, or other natural disasters. By addressing the performance of the transportation system related to the largest source of

U.S. CO₂ emissions, FHWA is implementing Congress’s express direction regarding NHPP goals. Measuring environmental performance though the GHG performance measure will assist States to consider CO₂ emissions from transportation in the performance management framework and help frame responses to the growing climate crisis. Reducing GHG emissions that are causing increases in temperature, sea level, extreme weather events, flooding, wildfires, and other natural disasters should then decrease the severity and impact of those conditions in the future. The FHWA has applied its expertise related to the transportation system and found that mitigating the cost of damage from natural disasters also requires helping State DOTs and MPOs address the cause of those disasters. However, and as discussed above, FHWA is not regulating CO₂ emissions or otherwise mandating specific reductions.

Comment: One commenter asserted that FHWA’s action is a broad attempt to regulate GHGs, and Congress must speak more clearly before FHWA may assert it has authority to mandate that all of the States and Puerto Rico decrease on-road CO₂ emissions in furtherance of the Administration’s emissions goals.

Response: The FHWA is not mandating that States or MPOs decrease emissions or compelling States to undertake projects that reduce GHGs. Consistent with the rest of the TPM program, FHWA is setting forth a program to measure performance on the Interstate and non-Interstate NHS, as directed by Congress.

Comment: One commenter stated that FHWA should develop an Environmental Impact Statement (EIS) for this action because of the rule’s wide-ranging potential impacts.

Response: The FHWA disagrees that an EIS is appropriate for this rulemaking. The FHWA has analyzed this rule pursuant to the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321 *et seq.*) and has determined that it is categorically excluded under 23 CFR 771.117(c)(20), which applies to the promulgation of rules, regulations, and directives. As discussed further in Section VIII of this preamble, FHWA does not anticipate any adverse environmental impacts from this rule, the purpose of which is to inform decisionmaking about the transportation sector’s contribution to GHG emissions, and thereby contribute to environmental sustainability. Therefore, a categorical exclusion is appropriate for this rulemaking and no further NEPA approvals are required.

Comments on the Appropriateness of the Proposed Measure

Comment: A large number of commenters questioned the appropriateness of the proposed measure to assess GHG emissions. A small number of these commenters asserted the proposed measure is not appropriate for rural States since rural residents need to drive further to access essential goods and services and alternative transportation modes are limited. In addition, several other commenters asserted the proposed measure does not account for exogenous factors beyond the control of State DOTs and MPOs, including population growth, economic growth, goods movement, and State and local policies, among others. Relatedly, many commenters recommended using a per-capita measure in addition to or instead of a measure of total emissions. A smaller number of commenters recommended using a measure of VMT to demonstrate the impact of transportation decisions on changes in travel behavior. Some commenters stated that the measure places an unequal burden on rural States and States with growing populations.

Other commenters addressed technical considerations underlying the suitability of the proposed measure. A couple of commenters indicated the measure does not account for fluctuations to NHS mileage resulting from roadway reclassifications, and one commenter asserted the measure does not account for regional variations in vehicle fleet efficiency or roadway speeds. Several commenters recommended the proposed measure consider lifecycle processes, such as electricity used by electric vehicles and embodied carbon associated with vehicle manufacture and transportation infrastructure. One commenter recommended that the measure account for excess fuel consumption associated with poor pavement condition.

Response: The FHWA has retained the GHG performance measure proposed in the NPRM, the percent change in tailpipe CO₂ emissions on the NHS compared to the reference year, because of its simplicity, ease of calculation, and reliance on data States already report to FHWA. The FHWA acknowledges commenters' observations that the GHG footprint of on-road transportation extends beyond tailpipe CO₂ emissions and includes lifecycle processes supporting to generation of electricity used by EVs, the production of transportation fuels, the manufacture of vehicles, and the construction and maintenance of transportation

infrastructure. However, FHWA believes that addressing these factors in a GHG measure would lead to more complicated and potentially less reliable calculations.

In addition, FHWA believes that the measure sufficiently accounts for several of the factors cited by commenters, such as the effect of roadway speed, changes vehicle fleet efficiency, and the effect of pavement condition on fuel efficiency, all of which are represented through State-reported fuel sales that are used to calculate the measure. The FHWA also believes that a GHG measure is preferable to a VMT-only measure, which would serve an indirect proxy for GHG emissions that would not account for the benefits of highway operations and pavement strategies implemented by State DOTs, electrification of the vehicle fleet, or other improvements in vehicle efficiency. The GHG measure FHWA is establishing also supports tracking of progress toward GHG reduction goals. This would not be the case with a measure that normalizes the effect of population or economic growth or excludes truck CO₂ emissions. The FHWA notes that regulation does not prevent State DOTs and MPOs from using additional performance measures at the local level.

The FHWA rejects the concept that this measure places an unequal burden on rural States and States with rapidly growing populations, as States with various conditions can implement this measure to help evaluate performance. The FHWA also reiterates that this rulemaking does not set any specific targets or require any GHG reductions. The commenters' assertions about disadvantaging rural areas falsely assume that this measure mandates GHG reductions and penalizes States and MPOs that fail to achieve reductions. Neither the proposal, nor the final rule, do any such thing. Therefore, FHWA disagrees with the commenters' assertions about unequal burden on rural States and States with rapidly growing populations.

Comments on Transportation Agencies' Influence on GHG Emissions

Comment: Several commenters addressed State DOTs' and MPOs' ability to reduce GHG emissions year over year through planning and programming of transportation projects. Several commenters asserted State DOTs and MPOs have limited ability to materially reduce GHG emissions. These commenters noted that performance against the GHG measure is affected by many different factors outside the control of State DOTs and MPOs,

including a State government's policies, population and economic growth, and fuel prices, among others. They also assert that transportation planning and programming is a multiyear process and State DOTs and MPOs cannot have a meaningful impact on GHG emission reductions year over year.

In contrast, a large number of commenters asserted that transportation agency decisions influence GHG emissions, and that a GHG measure is important for evaluating the impact of these decisions. Many commenters asserted that establishing a nationwide, uniform performance measure would ensure consistency in tracking progress and help State DOTs, MPOs, and FHWA to identify the most effective programs, strategies, and projects for carbon reduction. The commenters also asserted that the proposed performance measure would inform State DOT and MPO efforts to carry out performance-based planning and project selection, consistent with statutory requirements. Several commenters asserted that the decisions that State DOTs make in terms of designing infrastructure and constructing the built environment have a profound influence on travel behavior. A large number of comment campaign letters also asserted that a GHG measure is important for understanding the long-term impact of transportation investments on GHG emissions and to better connect transportation decisions with climate goals.

Response: Upon review of the comments, FHWA has retained the measure as proposed. The FHWA agrees with commenters asserting that a GHG measure is useful for evaluating the impact of transportation investments and other policies on GHG emissions. The FHWA also agrees that transportation investments have a meaningful impact on travel behavior, and that transportation agencies' policies and programs involving vehicle electrification, highway operations, and roadway maintenance practices provide further opportunities to reduce GHG emissions in absence of changes to travel behavior. The BIL provides more than \$27 billion in Federal funding to help State DOTs and MPOs achieve their GHG reduction targets. This total includes \$6.4 billion in formula funding to State DOTs and local governments through the CRP to support a range of projects designed to reduce on-road CO₂ emissions; \$5 billion to State DOTs through the National Electric Vehicle Infrastructure Formula Program to build out a national electric vehicle charging network; \$2.5 billion in competitive funding to State DOTs and local governments to deploy electric vehicle

and alternative fuel infrastructure, \$7.2 billion for the Transportation Alternatives Set-Aside that State DOTs and local governments can use to carry out pedestrian and bicycle infrastructure projects, and more than \$5 billion to ensure the nation's transit systems are tackling the climate crisis.¹⁶ In addition, transportation agencies have for decades been able to use Federal-aid Highway Program funds to support projects that reduce GHG emissions, including transit improvements, congestion reduction and traffic flow improvements, freight and intermodal initiatives, idle reduction technologies, travel demand management, carsharing, carpooling and vanpooling, and bike and pedestrian facilities. Given the range of options available to transportation agencies to reduce GHG emissions and the significant financial resources provided by BIL, FHWA rejects the premise that transportation agencies have limited capacity to influence GHG emissions.

The FHWA also believes that it is important for the measure to address total tailpipe CO₂ emissions on the NHS rather than normalizing this value by population or other factors, since atmospheric CO₂ concentrations are ultimately influenced by the total quantity of CO₂ emissions produced. The FHWA believes a measure addressing total emissions supports a whole-of-government approach to addressing climate change by implementing a consistent measure of CO₂ emissions on the NHS at the National, State, and metropolitan levels. The FHWA is requiring State DOTs and MPOs to establish declining GHG emissions targets. Contrary to the commenters' assertions FHWA is not requiring States to set specific declining target levels or achieve actual reductions in GHG emissions. State DOTs and MPOs have flexibility to set targets that are appropriate for their communities and that work for their respective climate change and other policy priorities, as long as the targets are declining.

Comments on Incentives and Disincentives

Comment: A large number of commenters addressed the creation of incentives or disincentives to strengthen the proposed GHG measure. The vast majority of these comments stated that

the proposed rule would be strengthened by including clear and specific incentives for those States and regions that meet their targets, such as providing extra points in competitive grant programs, favorable local match requirements, or expedited project/application review processes. Other commenters recommended restricting use of Federal transportation funds to projects that reduce GHG emissions in States and regions that did not meet their targets. A couple of commenters opposed creation of incentives or disincentives.

Response: Under 23 U.S.C. 145, the Federal-aid highway program is a federally assisted, State-administered program; FHWA does not determine which eligible projects, as selected by States, shall be financed. The FHWA cannot broadly limit the use of transportation funds in the manner recommended by commenters, and FHWA does not have the authority to restrict transportation funding for States that fail to meet their targets. However, BIL includes new programs that will help States and MPOs fund projects that reduce GHG emissions, which in turn, could assist them in meeting the targets that they set. This topic is further discussed in Section III this preamble. States and MPOs can additionally leverage their own programs to reduce GHG emissions by accounting for expected GHG impacts in the analysis and selection of transportation projects.

Comments on Penalties

Comment: Several commenters addressed the possibility of penalties being associated with the proposed measure. A few of these commenters sought clarification on whether FHWA intends to apply a penalty (including penalties associated with failure to comply with Federal requirements under 23 CFR 1.36). Other commenters requested the final rule include a section specifying that no penalties would be applied for not meeting a target. Other commenters asserted that FHWA is in fact providing a penalty for failing to reduce GHGs based on the Agency's authority under 23 CFR 1.36.

Response: There are no specific penalties for failing to achieve GHG targets. Rather, consistent with existing NHPP performance measures, if significant progress is not made for the target established for the GHG measure in 23 CFR 490.507(b), the State DOT must document the actions it will take to achieve that target no later than in its next biennial report, but is encouraged to do so sooner. Significant progress toward achieving NHPP performance targets is further described in 23 CFR

490.109. The FHWA did not propose specific penalties for failure to achieve performance targets, and is not finalizing any such penalty. Failure to achieve significant progress for this measure, as defined in 23 CFR 490.109, will also not trigger any penalties. State DOTs and MPOs that set a declining target but fail to achieve their targets can satisfy regulatory requirements by documenting the actions they will take to achieve that target in their next biennial report. The FHWA does not set or approve the State DOT's or MPO's targets.

Comments on Exemptions

Comment: Several commenters recommended various entities be exempt from the proposed measure for various reasons. The majority of these commenters asserted that rural States have limited options to reduce transportation GHG emissions through transit and other strategies that reduce VMT and should accordingly be exempted from the measure. A few commenters recommended that States and MPOs in attainment with the National Ambient Air Quality Standards be exempted from the GHG measure. One commenter asserted that the GHG measure does not recognize that rural States produce fewer GHG emissions than urban areas.

Response: The FHWA considered the comments suggesting certain entities be exempt from the GHG measure and declines to do so. Greenhouse gas emissions are produced on all NHS facilities. Once released, CO₂ and other GHGs take many years to leave the atmosphere, resulting in increasing global atmospheric concentrations of CO₂ emissions regardless of where they are produced. Urban and rural areas both contribute to increased carbon pollution in the atmosphere, and FHWA believes this rule will provide both with the tools to reduce carbon pollution. This is different from criteria pollutants, which last no more than weeks in the atmosphere and only impact local or regional air quality.

The FHWA also rejects commenters' suggestion that rural States have limited options to reduce transportation GHG emissions. If these States determine that transit and other measures to reduce VMT are not effective means of influencing GHG emissions, they have a wide range of alternative strategies and funding programs available. This includes both formula funding and discretionary grants to deploy electric vehicle charging infrastructure and thereby increase EV adoption, funding to improve roadway operations, and asset management practices to maintain

¹⁶ See Biden-Harris Administration Takes Step Forward to Combat Climate Change, Announces Proposed Transportation Greenhouse Gas Emission Reduction Framework, available at <https://highways.dot.gov/newsroom/biden-harris-administration-takes-step-forward-combat-climate-change-announces-proposed>.

roads and reduce excess fuel consumption from poor road condition surface. The FHWA reiterates that the final rule does not require rural States, or any State, set targets at a specific level or to reduce GHG emissions. The final rule also does not impose any penalties on a State for failing to meet its GHG targets. Therefore, there is no justification to exempt rural States, and doing so would run counter to the purpose of this rule, which is to provide consistent and timely information about on-road mobile source emissions on the NHS to support better informed planning choices to reduce GHG emissions or inform tradeoffs among competing policy choices.

Comments on Benefits of a GHG Measure

Comment: A large number of commenters addressed potential benefits from the proposed GHG measure. Several commenters, including State DOTs, that have independently measured and reported GHG emissions asserted that a GHG performance measure can inform planning and decision making, including project prioritization and statewide transportation planning processes. A few of these commenters additionally asserted that implementation of the proposed GHG measure as part of TPM would complement existing GHG reduction efforts. Additional benefits identified by commenters included: empowering State and local leaders to better align their transportation decisions with climate goals, enhancing transparency and accountability of investment decisions, supporting a consistent and coordinated approach to reducing GHG emissions across all levels of government, and supporting national GHG emission reduction goals in accordance with E.O. 13990 and E.O. 14008.

By contrast, several commenters questioned the benefits of the proposed measure. Several commenters asserted that DOTs and MPOs have limited influence over GHG emissions. One commenter asserted that the proposed measure would not help agencies identify projects to reduce GHG emissions and a couple of commenters asserted that the measure would not impact transportation decisions. Another commenter stated this is because the proposed rule does not propose a method for requiring continually decreasing GHG emissions and does not penalize noncompliance.

Response: The FHWA is establishing a GHG emissions performance measure in response to an increasingly urgent climate crisis and to improve the

transportation sector's GHG performance, which has lagged behind other major U.S. sectors. The EPA estimates of GHG emissions date back to 1990, and over that time the transportation sector has gone from being the third largest to the largest source of U.S. GHG emissions. The FHWA agrees with commenters that establishing a GHG performance measure is a critical step in improving transportation system performance and supporting national GHG reduction goals. A key premise underlying the GHG measure is that measuring and reporting complete, consistent, and timely information on CO₂ emissions from on-road mobile sources will provide opportunities for all levels of government and the public to make more informed decisions that consider transportation's contribution to climate change and opportunities to reduce GHG emissions. The FHWA believes that by establishing a uniform GHG measure, it is more likely that GHG emissions will be consistently and collaboratively considered by State DOTs and MPOs through transportation planning and performance management. The FHWA also agrees with the comments enumerating the benefits of establishing the GHG measure.

The FHWA disagrees that State DOTs and MPOs have limited influence over GHG emissions. As noted earlier, BIL provides more than \$27 billion in Federal funding to help State DOTs and MPOs achieve their GHG reduction targets, and States have additional ability to influence GHG emissions through highway operations and roadway maintenance. The FHWA also disagrees with commenters asserting that a GHG measure would not inform planning and investment decisions. As noted in comments from agencies that have implemented their own GHG measures, performance-based approaches that include GHG emissions have been successfully used to guide planning and investment decisions.

Comments on Burden Posed by a GHG Measure

Comment: Several commenters identified concerns about the impact of the proposed rule on State DOTs and MPOs. Several commenters asserted that the proposed rule would duplicate established and effective programs such as fuel economy standards established under the Corporate Average Fuel Economy (CAFE) Program, and transportation CO₂ estimates published by EPA and the Department of Energy (DOE). Other commenters asserted the implementation of calculating and tracking GHG emissions would be

overly burdensome, and that the costs of complying with declining targets would be significant for some States. A few commenters additionally asserted that the proposed GHG measure would not be sufficient for making program- and project-level investment decisions.

Response: FHWA disagrees that the measure established under this rule would place undue burden on States and MPOs. The FHWA also disagrees that the GHG measure would duplicate other Federal programs addressing transportation GHG emissions. A key purpose of the GHG measure is to provide an information source to help State DOTs, MPOs and other agencies set targets, monitor trends, and evaluate the impact of transportation investments and other strategies to reduce on-road GHG emissions. This is a different function from the CAFE program, which regulates GHG emissions rates for new vehicles and is not intended to account for factors such as changes in travel demand, congestion, and other factors affecting total on-road GHG emissions. While Federal agencies such as EPA and DOE publish estimates of total transportation CO₂ emissions, these data are not disaggregated to reflect on-road activity, and also lag the publication of FHWA fuel use data by up to a year. Since FHWA's GHG measure specifically addresses CO₂ on-road activity and utilizes FHWA's data for the estimated fuel volumes distributed shortly after its publication, it will serve as a comprehensive and timely information source to support transportation decision making and to track progress toward national goals.

Several State DOTs that have independently implemented their own on-road tailpipe CO₂ measure observed that all State DOTs already compile the necessary data as part of existing reporting obligations. These commenters asserted that the labor hour assumptions from the RIA are reasonable, that neither the estimation of the measure nor target setting would result in significant burdens for State DOT staff.

Lastly, FHWA disagrees that the cost of complying with declining targets will be burdensome to transportation agencies. The BIL provides over \$27 billion in Federal funding to help State DOTs and MPOs achieve the declining GHG targets that they will set under this rule. The rule does not impose compliance costs associated with achieving declining targets since the rule does not require that emissions actually decrease or establish any penalties in the event that declining targets are not achieved.

§ 490.101 Definitions

Comments on the Measure's Relationship to National GHG Goals

Comment: A large number of commenters addressed the proposed performance measure's relationship to the national GHG goals. Several commenters asserted that the proposed performance measure would support the national GHG goals and expressed support for this connection. A smaller number of commenters asserted that the proposed performance measure would not support the national goals, as meeting them through the targets is unattainable/unrealistic, would require actions beyond State DOT/MPO authority, and would not match the timeline needed to see improvements from BIL-funded projects.

In addition, several of these commenters asked for clarifications related to the Administration's national goals for reducing GHG emissions. One commenter asked whether the declining targets must demonstrate a 50–52 percent reduction in on-road CO₂ emissions relative to 2005 levels by 2030 and net-zero on-road CO₂ emissions by 2050, or whether the targets must only aid in meeting the Administration's goals. One commenter requested additional guidance on how to set targets consistent with the national GHG goals for 2030 and 2050, and another requested guidance on how to translate the proposed GHG targets, which would be expressed relative to 2021 levels, to the Administration's goals, which are expressed relative to 2005 levels. Another commenter requested clarification on the meaning of net-zero, and asked whether FHWA will provide mechanisms to offset remaining emissions to achieve net-zero by 2050.

Response: Upon considering public comments, FHWA recognizes that the reference to net-zero targets and national GHG goals in the NPRM may have caused confusion, and FHWA has removed the definition of net-zero from 23 CFR 490.101 and the requirement in 23 CFR 490.105(e)(10) that targets for the GHG measure “demonstrate reductions toward net-zero targets.” In the final rule, FHWA is not requiring State DOTs and MPOs to set any specific declining targets or achieve national GHG goals. Declining targets are not required to align with the Administration's goal for the U.S. to reduce CO₂ emissions 50–52 percent below 2005 levels by 2030 and achieve net-zero emissions economywide by 2050, in accordance with national policy established under E.O.s 13990 and 14008. Rather, FHWA believes

these national goals can provide a useful roadmap for State DOTs and MPOs as they consider how their targets fit into a longer timeframe of emission reductions.

§ 490.105 Establishment of Performance Targets

Comments on Establishing Declining Targets

Comment: A large number of commenters addressed the requirement to establish declining targets. The majority of these commenters were opposed to this requirement. Most of these commenters asserted that a declining target is inconsistent with 23 U.S.C. 150, which provides States with discretion in setting performance targets. Commenters asserted that States should set data-driven targets based on their own circumstances and analysis, which is not possible when declining targets are required. Commenters also asserted that a requirement for declining targets would reflect FHWA's influencing the selection of projects, with States facing pressure to select projects to support declining targets without commensurate funding through BIL to implement this type of change.

One commenter noted this would be the only measure to which MPOs would be expected to aid States in documenting declining targets, and requested that FHWA provide MPOs a 5-year grace period before requiring the declining targets to be established.

In contrast, several commenters supported the requirement to establish declining targets. These commenters asserted that such a requirement would require States to set targets that will result in improvement, as opposed to other performance measures, and support urgent progress on reducing GHG emissions from transportation. These commenters also asserted that the declining target requirement would not impinge on States' authority to set their own targets.

A few commenters recommended that FHWA require State DOTs and MPOs to provide their underlying assumptions and rationale for vehicle emissions rates and VMT, as well as to clarify in the final rule that targets should be based not only on projections for improvement in vehicle efficiency, but also on projections for reductions in emissions because of VMT-reducing investments, system efficiency enhancements, and/or other strategies.

Response: After considering these comments, FHWA has retained the requirement for State DOTs and MPOs to set declining targets as proposed in the NPRM and as further discussed in

this final rule. State DOTs and MPOs that have NHS mileage within their State geographic boundaries and metropolitan planning area boundaries, respectively, are required under the rule to establish declining targets for reducing CO₂ emissions generated by on-road mobile sources. Given the urgency of responding to the climate crisis, FHWA believes it is inappropriate for State DOTs and MPOs to delay establishing targets. The FHWA also believes States and MPOs have the tools necessary to meet these timelines. State DOTs will establish targets no later than February 1, 2024, and MPOs are required to establish targets no later than 180 days after the State DOT establishes their targets. See 23 CFR 490.105(e)(1)(ii) and 490.105(f)(1).

The requirement for State DOTs and MPOs to establish declining targets for tailpipe CO₂ emissions on the NHS is vital given the urgency of the climate crisis. Declining targets will help State DOTs and MPOs plan toward reductions in GHG emissions and make Federal infrastructure investment decisions that reduce climate pollution, a principle set forth in E.O. 14008 (86 FR 7626). As discussed in the NPRM, FHWA is not prescribing what declining targets would look like in each State or MPO. State DOTs and MPOs have the flexibility to set targets that work for their respective policies and priorities, so long as the targets are declining. Under the rule, State DOTs and MPOs have discretion in setting an appropriate declining target as informed by complete, consistent, and timely State and local information on GHG emissions from on-road mobile source emissions. The rule provides State DOTs and MPOs with the tools to consider GHG emissions in making transportation decisions and imposes no penalties on States and MPOs that do not meet their targets; therefore, FHWA rejects the characterization that State DOTs and MPOs are being pressured or otherwise required to select any specific project based on this measure.

The FHWA disagrees with the assertion that States and MPOs cannot set data-driven targets based on their own circumstances and analyses when the targets must be declining. States and MPOs will use the appropriate data to set declining targets, as informed by their policies and priorities. State DOTs and MPOs will use the data to evaluate current performance and predict future performance when establishing declining targets.

In addition, FHWA has removed the proposed requirement for declining targets to demonstrate reductions toward net-zero targets. For additional

information on FHWA's decision not to include net-zero in the final rule, see the discussion under Comments on the Measure's Relationship to National GHG goals, in the Section-by-Section Discussion of § 490.101.

Comments on Alternative Target Setting Frequencies

Comment: A large number of commenters provided feedback related to a question raised in the NPRM about introducing a new requirement for State DOTs and MPOs to establish 8- and 20-year targets at the beginning of each 4-year performance period. Many commenters favored adding long-term targets. Commenters in favor of the requirement noted that long-term targets can function as policy goals to allow for more forward-looking evaluation of emissions trajectories. The other commenters supporting this change asserted that long-term targets better align with FHWA planning requirements (Long Range Transportation Plan (LRTP), Metropolitan Transportation Plan (MTP), State Transportation Improvement Program (STIP), Transportation Improvement Program (TIP)), and would create greater visibility and accountability.

In contrast, a small number of commenters opposed adding long-term targets. A few of these commenters noted that they support establishing long-term targets as a best practice, but not as a requirement. Others responded that long-term targets would be too burdensome to develop and would lead to speculative results that will not add value to the target setting process.

Response: The FHWA considered the comments citing the benefits of establishing long-term targets but declines to do so at this time to remain consistent with the existing TPM framework used for the other NHPP measures. Providing consistency with other measures minimizes the complexity of the TPM requirements. It also allows the measures with biennial targets to be considered in relation to each other, which can help illustrate how these measure areas are part of a single transportation system. State DOTs and MPOs can voluntarily establish longer-term targets in the manner that best aligns with their individual policies and plans.

Comments on MPO Joint Targets

Comment: Several commenters expressed concern about the proposed requirement for joint UZA targets. Almost all of these commenters otherwise supported the proposed measure but recommended removing

the joint UZA target from the final rule. They identified a variety of concerns, particularly that a joint UZA target would be duplicative of the requirement for metropolitan planning area targets, thereby adding administrative burden for both MPOs and State DOTs. They also asserted that a joint UZA target would be overly complex, especially for planning agencies that are part of multiple UZAs or for those that share borders with a planning agency that serves a different population, such as rural and urban. A few commenters suggested alternatives to the joint UZA target: removing the target based on MPO boundaries and only requiring targets based on UZA; only requiring targets on either MPO boundaries or those based on UZAs; or limiting the targets based on MPO boundaries and on UZA boundaries only to MPOs and UZAs of a certain size, regardless of if there is a joint target or only metropolitan planning area targets.

Response: The FHWA has considered these comments and decided to retain the requirement for joint UZA targets. The FHWA disagrees with comments suggesting a joint UZA target is duplicative of the requirement for metropolitan planning area targets. The FHWA believes the requirement to establish a joint UZA target would encourage collaboration across MPO boundaries through coordinated systems and region-based approaches to reducing GHG emissions. The FHWA believes this collaboration is useful regardless of the MPO or UZA size. Therefore, FHWA has retained the requirement for MPOs to collectively establish a single joint 4-year target for each UZA that contains NHS mileage and that is overlapped by the boundaries of two or more metropolitan planning areas. As provided in 23 CFR 490.105(f)(10), joint targets are also required to be declining targets for reducing CO₂ emissions from on-road mobile sources, and these targets are established in addition to each MPO's individual target for their metropolitan planning area. The targets established are required to be a quantifiable target, which means a value must be used.

To support implementation of this final rule, FHWA is publishing in the docket applicability tables with the MPOs required to establish joint targets in accordance with 23 CFR 490.105(d)(4) and 490.105(f)(10). As with all other MPO targets, and consistent with 23 CFR 490.105(f)(1), joint targets are to be established no later than 180 days after the MPOs' respective State DOT(s) establish their targets. For additional information on the timeline for establishing joint

targets, see the discussion under Comments on MPO Target Setting Frequency in this section.

Comments on MPO Target Setting Frequency

Comment: A small number of commenters provided feedback on the frequency of MPO targets. A couple of these commenters recommended that the final rule only include 4-year targets for MPOs. Another requested that the final rule add 2-year targets for MPOs to increase coordination with States on the same schedule. In addition, one commented that the final rule should leave out both the 2- and 4-year targets, and instead adopt 8- and 20-year targets.

Response: Upon consideration of the comments, FHWA has retained the requirement for MPOs to establish 4-year targets as previously established in 23 CFR 490.105(f). The FHWA believes the benefits associated with requiring MPOs to establish additional 2-year targets for the GHG measure would not exceed the additional burden to MPOs. The FHWA believes that introducing 8- and 20-year targets that would only apply to the MPOs and would only apply to a single measure would add confusion and complexity that would not be offset by meaningful benefits.

The final rule makes no changes to the MPO target establishment schedule, and MPOs will continue to report their baseline performance and progress toward their targets in their system performance report. See 23 CFR 490.107(c)(2). An MPO will establish targets for this measure, including any required joint targets, no later than 180 days after their respective State DOT(s) establishes their 4-year target for the measure. See 23 CFR 490.105(f)(1). The MPOs will report their established GHG targets, including any joint targets, to the State DOT in a manner that is documented and mutually agreed upon by both parties. See 23 CFR 490.107(c)(1).

Comments on Technical Assistance

Comment: A large number of commenters requested technical assistance from FHWA to assist in the implementation of the proposed performance measure. Examples cited by these commenters included tools and best practices for modeling the emissions impacts of various types of projects; strategies/pathways/roadmaps to reduce tailpipe CO₂ emissions (especially those with other social and economic impacts, including for disadvantaged communities); factors to consider in setting targets; and recommended targets to meet national GHG reduction goals.

Response: The FHWA believes the existing technical assistance, technical tools, and guidance available through FHWA's TPM and Energy and Emissions Websites, as well as resources provided by the National Highway Institute (NHI), AASHTO, AAMPO, and other publicly available sources provide the information necessary for State DOTs and MPOs to establish targets for the GHG measure. In addition to these existing resources, FHWA recently launched an Every Day Counts (EDC) innovation to help transportation agencies quantify GHG emissions and set targets for reducing GHG emissions through transportation planning. As this measure is implemented, FHWA will continue to consider how best to support State DOTs and MPOs in implementing all the TPM requirements in 23 CFR part 490 and will provide technical assistance on an ongoing basis.

Comments on Benchmarks

Comment: A few commenters suggested that FHWA provide intermediate benchmarks for States to use to ensure they are on track to meet the 2030 national GHG reduction goal.

Response: As noted earlier, while FHWA encourages State DOTs and MPOs to consider the Administration's GHG emissions reduction and net-zero goals when establishing targets, FHWA has removed the proposed requirement for State DOTs to align their declining targets with the Administration's GHG reduction goals. State DOTs and MPOs have the flexibility to set targets that work for their respective policies and priorities, so long as the targets are declining. For example, a State DOT might set targets that would result in steady, incremental progress toward net-zero emissions, or that achieve aggressive early GHG emissions reductions, or be more gradual at first and become more aggressive later. Therefore, FHWA declines to provide intermediate benchmarks at this time. However, State DOTs may voluntarily establish longer-term targets to serve as intermediate benchmarks to help them align their short-term emission reduction targets with their long-term GHG reduction goals.

§ 490.107 Reporting on Performance Targets

Comments on Reporting Start Date

Comment: Many commenters provided feedback on the reporting start date of October 1, 2022. All these commenters oppose this date, which they indicated would precede the NPRM public comment period, which

closed on October 13, 2022. One commenter recommended that the rule be revised to either (1) not require States to set two-year targets for the 2022–2025 time period, and have States set their four-year targets for the 2022–2025 time period as part of the October 1, 2024 mid-performance period progress report; or (2) delay implementation altogether until the 2026–2029 performance period. Other commenters recommended a reporting start date in 2023, with the expectation that they would have six months to one year from the final rule for target setting/coordination before their first reporting. Other commenters recommended October 1, 2024 or October 1, 2028, indicating that these dates would correspond with other performance measures. A few commenters suggested a phased approach, such as reporting reference year data and their four-year target in the October 1, 2024 Mid Performance Period Progress Report, and then continuing with two- and four-year targets in the next performance period.

Response: Upon consideration of comments, FHWA determined that State DOTs and MPOs will establish or adjust targets every two years beginning in 2024. Targets will first be established for this measure by State DOTs and reported to FHWA in a State Initial GHG Report, no later than February 1, 2024. See 490.105(e)(1)(ii) and 490.107(d). The information provided by State DOTs in the 2024 State Initial GHG Report will be considered the 2024 Mid Performance Period Progress Report. See 490.107(b)(2)(i). State DOT reporting will follow an October 1st cycle beginning in 2026 to align with other measure reporting requirements. Recognizing the urgency of addressing the climate crisis, FHWA is establishing an initial date that is as early as practicable and will reflect the best available data. The FHWA is also establishing a February 1, 2024 reporting date for the first GHG targets to increase the opportunities for the targets to be used to help guide overall Federal investments available through the many programs available in BIL that can reduce CO₂ emissions. The February 1, 2024 reporting date is supportive of a 2022 GHG measure reference year since the 2022 VMT data are expected to be finalized by November 30, 2023.

The FHWA made changes throughout the regulation in response to the February 1, 2024 target establishment and reporting date, and they are summarized here. Consistent with all other NHPP measures, the GHG measure will have a 4-year performance period that will begin January 1, 2022. See 23

CFR 490.105(e)(4)(i) and 490.105(e)(4)(i)(C). The mid-point of the performance period is 2024, and the end of the performance period is 2026. The FHWA acknowledges that this date is in advance of this final rule's effective date. However, the start of the performance period merely serves as the benchmark that begins the TPM schedule. This measure does not generate any requirements for State DOTs or MPOs in advance of the effective date. The first GHG targets will be due on February 1, 2024, after the effective date of this rulemaking. The FHWA believes it is appropriate to begin the performance period on January 1, 2022 to align with the TPM program and to facilitate a mid-point of the performance period in 2024, and to align with TPM's existing 4-year performance period.

Since initial targets will be established so close to the mid-point, FHWA determined that 2-year targets would not be required. See 23 CFR 490.105(10)(i)(A) and 490.105(e)(4)(iii). Section 490.105(e)(10)(i)(B) requires that 4-year targets for this measure be established, and section 490.105(e)(1)(ii) requires they be established no later than February 1, 2024. Section 490.107(d) was added to create the State Initial GHG Report to receive the State DOT's initial 4-year GHG target.

The State Initial GHG Report requirements are similar to the Baseline Performance Period Report. In the State Initial GHG Report, State DOTs will provide the 4-year target, the basis for the target, the baseline data, which is the reference year for this performance period only, the relationship with other performance expectations, the data points used to calculate the GHG metric, described in 23 CFR 490.511(c), and the value calculated. The data used to calculate the metric for the reference year for the Initial GHG Report is specified in section 490.107(d)(2). Information on the GHG measure will be submitted as part of the biennial reports starting with the 2026 Full Performance Period Progress Report. See 23 CFR 490.107(b)(1), (b)(2), and (b)(3).

For additional information on how the initial target establishment requirements associated with February 1, 2024 will impact the significant progress determination done after the 2024 Mid Performance Period Progress Report, see the discussion under Comments on Significant Progress Timing, in the Section-by-Section Discussion of section 490.109.

Comments on MPO Reporting Frequency and Process

Comment: Many commenters responded to the MPO reporting requirements and many proposed revisions to the requirements. Many of these commenters noted that the final rule should require MPOs to report every two years on progress towards the performance measure, asserting that MPOs have a significant impact on transportation investment decisions in metropolitan planning areas, and therefore, should be as transparent as States in this regard. Similarly, another commenter suggested that the final rule could encourage but not require MPO reporting every two years given the additional burden of biennial reporting.

A couple of commenters requested that the final rule not require additional reporting by MPOs outside of the system performance report so as not to increase the reporting and tracking burden on MPOs and State DOTs.

Response: The FHWA considered the comments and determined the existing reporting requirements for MPOs in 23 CFR 490.107(c), which FHWA has successfully implemented for other performance measures, are appropriate for reporting on the GHG measure. The MPOs are required to report on performance within their metropolitan transportation plan (MTP), which are developed every 4 or 5 years. See 23 CFR 450.324(d). Biennial reporting by MPOs would necessitate an additional report outside of the MTP. At this time, FHWA does not believe that adding a new process for reporting on performance specifically for the GHG measure would provide benefits that would exceed the increased burden from additional reporting requirements. Therefore, FHWA has not made any changes in the final rule based on the comments. The FHWA has retained the requirement for MPOs to report progress toward their GHG target in their system performance report in the metropolitan plan.

For related information on the MPO target establishment timeline, see the discussion under Comments on MPO Target Setting Frequency in the Section-By-Section Discussion for section 490.105.

For additional information related to MPO reporting, see the discussion under Comments on MPO Report Content in this section.

Comments on MPO Report Content

Comment: One commenter noted that there does not appear to be a requirement for the MPO to report the value of the measure (percent reduction

in tailpipe CO₂ emissions on the NHS) for their MPA or any required joint UZA targets (for those UZAs that overlap multiple MPOs). In addition, a commenter asked for clarification that reporting of the MPO metric calculation method is not required when an MPO supports the State targets. Another commenter noted that if an MPO chooses to support the State targets, reporting the MPO region total appears unnecessary. Commenters noted that for all the other performance measures (e.g., safety measures bridge and pavement condition measures, and system performance and reliability measures), there is no requirement for MPOs to calculate and report metric or measure values to the State DOT(s).

Response: The FHWA has not made any changes in the final rule based on these comments. The FHWA believes that the requirement for MPOs to report the metrics used to calculate the measure and the metric calculation method is justified because MPOs can use a range of different approaches to calculate the metric, even if they choose to adopt State targets. For this measure, MPOs are required to report all targets they are required to establish, including any joint targets, to the State DOT in a manner that is documented and mutually agreed upon by both parties. See 23 CFR 490.107(c)(1). In the system performance report, MPOs will report baseline performance for this measure and progress toward the achievement of their targets. They will also report the calculation of annual tailpipe CO₂ emissions for the NHS for the period between the reference year and the first system performance report that includes the GHG measure information. Subsequent reports will cover the period between the current report and the last report. In addition, the MPO will report a description of their metric calculation method(s).

The FHWA has removed the proposed requirement for MPOs to report tailpipe CO₂ emissions on all roads. The reason for removing this requirement is described in response to the comments on MPO metric reporting, in the discussion for section 490.511.

As a new requirement of the rule, in the system performance report, FHWA is requiring MPOs using metric calculation methods not specified in section 490.511(d) to include information demonstrating the method(s) has valid and useful results for measuring transportation related CO₂. The reason for this requirement is provided in the discussion under Comments on Mutual Agreement of Metric Calculation Method by State

DOTs and MPOs, in the Section-by-Section Discussion for section 490.511.

Consistent with 23 CFR 450.226 and 23 CFR 450.340, the MPO's MTP and TIP must meet the Performance-Based Planning and Programming (PBPP) requirements of the planning rule for this performance measure by no later than 2 years after the effective date of this rule.

Comments on Biennial Reporting Cycle

Comment: A few commenters provided general feedback on the State DOT biennial reporting cycle and recommended that the final rule not require two-year reporting for State DOTs.

Response: The FHWA has not made any changes in the final rule based on the comments. Section 150(e) of Title 23, U.S.C., requires State DOTs to report on performance to FHWA on a biennial basis. The FHWA considered the comments and determined the existing biennial reporting cycle established in 23 CFR 490.107(b), which FHWA has successfully implemented for other performance measures, will support State DOTs as they implement the new GHG measure within the context of the overall TPM program. This two-year reporting for State DOTs is consistent with other performance measures, which minimizes the incremental burden since State DOTs do not need to develop an additional reporting process and cycle for this one measure. Two-year reporting is also useful in helping State DOTs progress toward a longer-term goal and can reflect short-term actions such as operational improvements. Such short-term actions are typically outside the control of MPOs, which consequently have 4-year reporting requirements.

Comments on Alternative Progress Reporting Requirements

Comment: A couple of commenters suggested additions to the reporting requirements. One requested a provision for qualitative reporting to describe progress on the measure, to be able to report trends and overall actions and strategies that contribute to lower sales of fossil fuel used for on-road vehicles. Another requested requiring State DOTs and MPOs to identify planned actions to reduce emissions and actions that have been implemented to reduce emissions.

Response: The FHWA has not made any changes in the final rule based on the comments. The reporting requirements in 23 CFR 490.107 represent the minimum requirements for State DOTs and MPOs under the TPM regulations. The requirements in the final rule do not prevent State DOTs

and MPOs from providing more detailed qualitative reporting on progress and planned actions at the State and local level.

Comments on Publicizing GHG Reporting Information

Comment: A large number of commenters provided recommendations intended to increase the transparency and accessibility of reporting on performance. Some commenters recommended that FHWA publish a regular report on State DOT and MPO progress, with a couple of these commenters suggesting that such a report should be issued within three months of FHWA receiving the data and be made available in an interactive format that allows viewers to see both detailed and summary data. Commenters noted that having the data publicly available would also help stakeholders to hold State DOTs and MPOs accountable for progress toward their GHG targets.

Response: The FHWA has not made any changes in the final rule based on the comments. As part of FHWA's commitment to transparency, FHWA regularly publishes the State DOT's biennial reports and FHWA's significant progress determinations on its website as part of the publicly available TPM Dashboards, and the GHG measure will be included in the TPM Dashboards. The State performance dashboards and reports are available at <https://www.fhwa.dot.gov/tpm/reporting/state/>.

State DOTs and MPOs are required to report on progress as outlined in this final rule and described in 23 CFR 490.107. External reporting by the U.S. DOT on funds spent in specific areas is outside the scope of this rulemaking.

§ 490.109 Assessing Significant Progress Toward Achieving the Performance Targets for the National Highway Performance Program and the National Highway Freight Program

Comments on Consequences of Not Achieving Significant Progress

Comment: A small number of commenters addressed the requirement that State DOTs document the actions they will take should they fail to demonstrate significant progress toward their targets. Some of the commenters asserted such a requirement would not influence future target achievement. Some of these commenters recommended the final rule include requirements for State DOTs to provide more detailed information on projects or programs to reduce emissions. Such information would identify future actions to reduce emissions, and

include estimated emissions reductions, timelines for implementation and funding sources. One commenter recommended the requirement be revised to require a State DOT to document actions that have been taken in support of targets and identify barriers preventing target achievement. One commenter asked for clarification on whether the documented actions would be binding for MPOs.

Response: The FHWA has not made any changes in the final rule based on the comments. The FHWA does not intend to use the significant progress determination process to be punitive or to encourage State DOTs to establish easy-to-achieve targets. Establishing targets and assessing progress is intended to encourage State DOTs and MPOs to establish data-supported targets that consider anticipated resources and potential uncertainties and to provide data-supported explanations of performance changes. If a State DOT does not make significant progress, FHWA expects the State DOT to provide data-supported explanations for not achieving significant progress, and their plan to achieve said progress in the future.

The FHWA determined that creating additional requirements related to the consequences of not achieving significant progress toward achieving GHG performance targets would create potential burdens that outweigh the potential benefits of such efforts. The documentation requirements in 23 CFR 490.109(f)(1)(v) represents the minimum information State DOTs are federally required to provide. State DOTs can provide additional information in their biennial reports if they feel it supports their discussion of target achievement, or significant progress.

Information provided by the State DOT in response to the requirement in 23 CFR 490.109(f)(1)(v), does not, on its own, require that an MPO within that State select a specific project.

Comments on Significant Progress Criteria

Comment: A small number of commenters recommended that significant progress be defined more narrowly. Commenters suggested the significant progress determination be changed to require performance better than the level that would be achieved through reductions in vehicle emission rates alone, define a minimum percentage of a target that must be reached, use a trend based on multiple performance periods, or use some combination of such factors.

Response: The FHWA considered these comments and declines to apply a

narrower definition of significant progress. The existing criteria at 23 CFR 490.109(e)(2) for determining significant progress are well understood and have been applied successfully for the other NHPP and NHFP measures identified in 23 CFR 490.105(c)(1)–(6). Maintaining consistency with the existing significant progress determination criteria will ensure consistency with the other measures and simplify the process. Accordingly, FHWA will determine that a State DOT has made significant progress toward the achievement of each 2-year or 4-year applicable GHG target if (1) the actual performance level is better than the baseline performance, or (2) the actual performance level is equal to or better than the established target, as defined in 23 CFR 490.109(e)(2).

Comments on Significant Progress Timing

Comment: One commenter recommended that FHWA not require a significant progress determination for the first performance period since transportation emissions in initial years would reflect planning and investment decisions made prior to the final rule.

Response: In response to this and other comments and in line with 4-year targets being reported February 1, 2024, FHWA will not assess significant progress toward the achievement of 2-year targets for the GHG measure following the 2024 Mid Performance Period Progress Report. State DOT planning and investment decisions follow a cyclical process and should be informed by State DOT progress toward achieving its GHG targets. As a result, FHWA believes it to be beneficial to begin significant progress determinations for the GHG measure as early as is reasonable. The FHWA will first assess significant progress toward the achievement of targets for the GHG measure after the 2026 Full Performance Period Progress Report (due October 1, 2026).

In response to the initial target establishment requirements related to February 1, 2024, when conducting the significant progress determination after the 2026 Full Performance Period Progress Report, the performance for the reference year shall be used as the baseline performance, as described in 23 CFR 490.105(e)(10)(i)(C).

For additional information on the target establishment requirements associated with February 1, 2024, see the discussion under Comments on Reporting Start Date, in the Section-by-Section Discussion of section 490.107.

§ 490.503 Applicability**Comments on Roadway Applicability**

Comment: A large number of commenters recommended that State DOTs and MPOs be required to set targets and track GHG emissions from travel on all public roads and not just the NHS. These comments asserted that the NHS represents only about 5 percent of total U.S. roadways, and just over 50 percent of vehicle miles traveled. They also asserted that setting targets and tracking emissions from travel on all public roads would provide a more comprehensive understanding of transportation emissions and allow for more comprehensive solutions.

Response: The FHWA is finalizing as proposed that this measure will assess performance on the NHS. The FHWA acknowledges that the NHS only represents a limited set of U.S. roadways, and a measure for all public roads would capture more emissions from the transportation sector. However, as detailed in Section III of this preamble, FHWA is promulgating this rulemaking under 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V), which requires that the Secretary establish measures for States to use to assess the performance of the Interstate System and the non-Interstate NHS. The statute does not provide authority to measure performance on public roads other than the Interstate and non-Interstate NHS. Thus, the GHG measure under 23 CFR 490.105(c)(5), and associated requirements, must be based on performance on the Interstate System and non-Interstate NHS. However, State DOTs and MPOs can choose to implement other measures to support their programs, including measures that apply to all roads, in a manner that best aligns with their individual policies and plans.

§ 490.505 Definitions**Comments on Reference Year**

Comment: Many commenters, including those both supporting and opposed to the proposed measure, provided feedback on the use of calendar year (CY) 2021 as the reference year, with all asserting that it would not be appropriate because of the lingering effects of the COVID–19 pandemic on travel in 2021. Commenters noted that using CY 2021 would set the baseline artificially low as VMT and fuels sales continue to rebound and would make it difficult for States to meet declining targets. Commenters provided one or more of the following suggestions as an alternative to using CY 2021 as the reference year: 2022 or a year further in

the future; 2019 as a pre-pandemic year; 2005 as a reference to the national GHG targets; or the 5-year average as the baseline.

Response: The FHWA agrees with the commenters' observation that the COVID–19 pandemic reduced travel demand, motor fuel consumption, and CO₂ emissions in 2021 as compared to pre-pandemic levels, and that using 2021 as a reference year would establish a lower-than-normal basis for evaluating future performance. In response to these concerns, FHWA is establishing 2022 as the reference year for the GHG measure. In 2022, travel activity is estimated to have nearly rebounded to pre-pandemic levels, with FHWA's December 2022 Traffic Volume Trends report showing cumulative mileage of 3.17 trillion miles in 2022, compared with 3.27 trillion miles in 2019.¹⁷ 2022 is also the most recent year for which finalized VMT estimates will be available to use in calculating the State DOTs' GHG metric and measure.

Comments on Definition of GHG Emissions

Comment: Several commenters requested clarification on the definition of GHG emissions provided in the NPRM. These commenters asserted that definition proposed at 23 CFR 490.505 goes beyond tailpipe CO₂ emissions to include methane, nitrous oxides, and hydrofluorocarbons. Commenters asserted that this broader definition could open the door to further regulation without a rulemaking.

Response: The definition of GHG included in the NPRM is a common, scientific definition of GHG emissions, which include CO₂ in addition to other gases such as methane (CH₄), nitrous oxide (N₂O), and hydrofluorocarbons (HFCs). According to EPA data, CO₂ accounts for approximately 97 percent of on-road GHG emissions when weighting the 100-year global warming potential of CO₂ and other greenhouse gases.¹⁸ The FHWA concluded that because approximately 97 percent of on-road GHG emissions are from CO₂, including non-CO₂ gases in the measure

would not yield significant benefits. Any changes to the GHG measure, including any expansion to the applicability of this measure beyond tailpipe CO₂ emissions, would follow notice and comment rulemaking.

§ 490.509 Data Requirements**Comments on CO₂ Emissions Factor**

Comment: Several commenters provided feedback on the proposal for FHWA to provide a standard CO₂ emissions factor for each fuel type. A few of the commenters said FHWA should establish CO₂ emissions factors, with one recommending that FHWA provide optional supplemental fuel blend information and State-specific carbon intensity values based on Low Carbon Fuel Standards reporting. Several commenters requested that FHWA consider accommodating alternative emissions factors for fuel blends when States and MPOs provide credible alternatives. A few commenters requested additional clarity on CO₂ emissions factors, including what they will look like, how they will change over time, how they will be accessed, whether they will vary based on location, and for some specific examples. One commenter stated there is a need to incorporate the biogenic nature of CO₂ from bioethanol into the emissions factor calculation, with one commenter expressing general concerns about the inputs to EPA's Motor Vehicle Emissions Simulator (MOVES) Model.

Response: As proposed in the NPRM, FHWA will publish uniform CO₂ emissions factors for each fuel type to be used by all States in calculating the State DOT's metric for the GHG measure. The FHWA believes that the requirement for States to use a uniform factor, for each fuel type will ensure consistency and comparability of States' estimates of tailpipe CO₂ emissions.

The FHWA recognizes that some States have implemented or are considering the implementation of low carbon fuels programs to reduce the overall carbon intensity of transportation fuels. However, since these programs often target reductions in the GHG emissions from well-to-pump processes, FHWA believes that including emission factors for alternative fuel blends as part of a tailpipe-only measure would be overly complex. The FHWA recognizes that CO₂ emissions estimates for the transportation sector as reported in the EPA's Inventory of U.S. GHG Emissions and Sinks do not include CO₂ emissions associated with biofuels, such as the ethanol component of E10 and other gasoline blends, since it is assumed that

¹⁷ See Office of Highway Policy Information, Federal Highway Administration, Traffic Volume Trends December 2022, available at https://www.fhwa.dot.gov/policyinformation/travel_monitoring/22dectvt/; Traffic Volume Trends December 2019, available at https://www.fhwa.dot.gov/policyinformation/travel_monitoring/19dectvt/.

¹⁸ See EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2021, table 2–13, available at <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021>. EPA's estimates weight CO₂ and other greenhouse gases on their 100-year global warming potentials, as specified in the Intergovernmental Panel on Climate Change Fifth Assessment Report.

the combustion of the biogenic component of these fuels is recycled as biofuel crops and forests regenerate. The FHWA will consider EPA's accounting practice for addressing biofuel CO₂ emissions as it develops the standard CO₂ emissions factors to support this final rule. The FHWA will publish these factors on its website by August 15th of each biennial reporting year.

Comments on Data Availability Date

Comment: A small number of commenters requested that FHWA provide data to calculate the system performance earlier than the annual date of August 15, with a few specifying that this should be no later than May 1 of each year or, if no joint UZA target is required, then no later than July 1.

One commenter indicated that the prior year's data in Table VM-3—Annual Vehicle Miles and Table MF-21—Motor-Fuel Use has been published in mid-late October in the past, which would conflict with an October 1 deadline for report submissions.

Response: The FHWA appreciates commenters' interest in having data available as early as possible to support State biennial reporting on October 1 of each even year. While estimates of annual motor fuel volumes distributed are not expected to be finalized by FHWA until August 15th, States and MPOs can develop preliminary estimates and forecasts of GHG emissions using the values in FHWA's *Monthly Motor Fuel Reported by States* publication, available on the website of FHWA's Office of Highway Policy Information, and the State-reported fuel sale information.

In response to the comments requesting data earlier than proposed and FHWA's reexamination of when the VMT data will be available, FHWA revised 23 CFR 490.509(h) as well as 23 CFR 490.109(d)(1)(vi) and (d)(1)(vii) to ensure that State DOTs are able to use their most accurate VMT data to estimate the NHS share of total on-road tailpipe CO₂ emissions when reporting actual performance and discussing progress. These changes were made in response to a comment noting that HPMS VMT data may not be finalized by August 15, as proposed in the NPRM.

The final rule allows State DOTs to use their best available VMT data that represents the prior calendar year when reporting performance and their GHG measure and metric information in the biennial reports. See 23 CFR 490.509(h). Related changes were made to the State DOT metric reporting requirements the biennial reports. See 490.107(b)(1)(ii)(H), (b)(2)(ii)(J) and (b)(3)(ii)(I). Because the VMT data used

by the State DOT when preparing the biennial report may not be known to FHWA, State DOTs are required to provide the values they use to calculate the reported metric, and a description of the data source(s) used for the VMT information they report. Section 490.511(f)(2) was revised to be consistent with the metric reporting requirements in 23 CFR 490.107(b)(1)(ii)(H), (b)(2)(ii)(J), and (b)(3)(ii)(I).

The change to 23 CFR 490.509(h) necessitated changes to the data FHWA will use in the significant progress determination. In 23 CFR 490.109(d)(1)(vi) and (d)(1)(vii) FHWA has specified that for the significant progress determination, baseline performance will be based on data from HPMS as of November 30th of the baseline report year, and the reference year will be based on HPMS data as of November 30, 2023. The FHWA also added section 490.109(e)(4)(vii) to clarify that the data used must be accepted by FHWA by the dates specified in section 490.109(d)(1).

Comments on Accessibility of Fuel Sales Data

Comment: A small number of commenters expressed concern at MPOs' inability to access the Fuels & FASH dataset and requested more guidance on how the data could be accessed. One commenter suggested using publicly available State data instead. Another requested clarification on how a State will calculate the aggregate fuel consumption by fuel type.

Response: States are responsible for submitting preliminary estimated totals of monthly fuel volumes distributed for gasoline and "special fuel" (which primarily consists of diesel) which are due to FHWA 90 days following the end of a given month. These estimates are made publicly available for each State as part of FHWA's Monthly Motor Fuel Report, accessible on the Office of Highway Policy Information website. Final estimated fuel for a given year are adjusted to account for: (1) updated monthly fuel volumes distributed for gasoline and "special fuel" provided by the States, and (2) non-highway use of fuels. These estimates will be available by August 15 of each reporting year (*i.e.*, the following year).

Comments on Non-Highway Fuel Use

Comment: A couple of commenters asserted a portion of fuel sales are consumed off the roadway network, which is a circumstance that is likely more prevalent in rural areas. These commenters asserted that off-highway

use of fuels would not be accounted for in fuel use data provided by FHWA.

Response: The FHWA uses a modeling process to estimate the portion of gasoline that is distributed and used for non-highway purposes. These data are then used to adjust the gasoline volume data submitted by the States to identify the volumes that are used specifically for on-highway purposes. In addition, FHWA instructs all States not to report non-highway use of special fuels, including red dyed diesel and kerosene that is untaxed and intended for non-highway applications.

Comments on GHG Emissions Analysis Techniques

Comment: A commenter asserted that the effectiveness of the proposed rule would be limited by current traffic modeling practices. The commenter asserted that the final rule would benefit from improved data collection and analysis techniques, a more standardized approach to documenting projects within the STIP/TIP and ensuring a requirement that emissions from induced demand be included in modeling.

Response: The FHWA believes the data and methods specified in the NPRM are appropriate to evaluate performance related to the GHG measure. State CO₂ estimates are calculated by multiplying gallons of fuel taxed by each State by the CO₂ emissions for each fuel type. The FHWA's Fuels & FASH database will serve as the source of fuel use data since it is a national, established, and validated source of fuel use information as reported by States. The FHWA believes that Fuels & FASH provides advantages for estimating fuel consumption and CO₂ emissions compared to model-based approaches, which by necessity are built on simplified mathematical representations of transportation networks, travel choices, vehicle fuel efficiency, and other factors. Fuels sales data implicitly accounts for travel demand and fuel consumption resulting from transportation policies and investments, including behavioral changes following highway construction (sometimes referred to as "induced demand"). The FHWA recognizes that fuel sales may not precisely align with the amount of fuel combustion and CO₂ emissions within the boundaries of a State, particularly since drivers may cross State lines to purchase fuel. However, FHWA believes the data and methods for the State DOT metric calculation achieve an appropriate balance between simplicity and accuracy and will

provide a useful way to monitor trends over time.

The FHWA recognizes that MPOs lack a data source comparable to Fuels & FASH and therefore must estimate CO₂ emissions using an approach different from the States. The FHWA believes that it is appropriate to leave the data and metric calculation methods to the discretion of MPOs, and that it would be unreasonable to specify data collection standards or modeling practices, particularly since some MPOs do not employ technical staff or support travel and emissions models. However, FHWA has updated the final rule to require MPOs that choose a metric calculation approach not enumerated in section 490.511(d) to demonstrate the method has valid and useful results.

Finally, State DOTs and MPOs may employ travel models, emissions models, and other analytics to support transportation planning, programming, and the development of GHG reduction targets. In so doing, they can consider the degree to which their models are sensitive to the travel and emissions impacts of GHG reduction strategies and other decisions, such as future highway capacity. However, FHWA believes it is not appropriate to specify the models or other practices that States and MPOs use for these purposes as part of the final rule.

For additional information related to the CO₂ factor, see the discussion under Comments on CO₂ Emissions Factor, in this section.

§ 490.511 Calculation of National Highway System Performance Metrics

Comments on State DOT GHG Metric Calculation Method

Comment: Several commenters provided input on the calculation of the proposed GHG performance measure. A few commenters expressed support for using existing national data sets for fuel sales and VMT data, while a few comments offered proposed revisions. Alternatives suggested included allowing States to propose alternative or additional data sets or methodologies and requiring States to use one of the methods offered for MPOs in the proposed rule (*i.e.*, MOVES or FHWA's Energy and Emissions Reduction Policy Analysis Tool (EERPAT)).

Response: The FHWA has retained the State DOT metric calculation method proposed in the NPRM. This approach is based on fuel use data that is already collected by States and reported to FHWA, ensuring comparability between State estimates. As noted in response to the previous comment, FHWA believes this approach

provides a more accurate estimate of total fuel use and CO₂ emissions than model-based approaches. The FHWA recognizes that this approach includes some simplifying assumptions, particularly by assuming a similar rate of GHG emissions on NHS and non-NHS facilities per VMT. While it is expected that emissions rates would differ somewhat between NHS- and non-NHS facilities, FHWA believes that this simplifying assumption is justified since the difference between emissions rates on NHS- and non-NHS facilities would be largely constant from year-to-year and similar across States, providing a consistent way to monitor performance.

For additional information on how the MPO's metric calculation method is selected and documented, see the discussion under Comments on Mutual Agreement on MPO Metric Calculation Method by State DOTs and MPOs, which is part of this section.

Comments on MPO GHG Metric Calculation Method

Comment: Several commenters addressed MPO metric calculation methodology and reporting. Approximately half of these commenters supported preserving MPOs' flexibility in calculating the GHG metric. In contrast, a couple of commenters supported requiring MPOs to use the MOVES model to calculate GHG emissions, while one asserted that FHWA should provide the data needed for MPOs to calculate a metric for the GHG measure. In addition, one commenter questioned the requirement for MPOs to calculate and report tailpipe CO₂ emissions on all roads, noting the MPO may choose a methodology that allows for calculating the GHG metric for NHS roads directly.

Response: Upon consideration of comments, FHWA is preserving MPOs' flexibility to use a range of different approaches in calculating the metric for the GHG measure. The FHWA recognizes that technical capabilities vary across MPOs and that some MPOs may not support a travel demand model or be required to use EPA's MOVES model. The FHWA also appreciates the observation that some MPOs may choose to calculate tailpipe CO₂ emissions on the NHS facilities directly. This is inherently different from State DOTs, which are required to calculate CO₂ emissions for all roads before estimating the proportion of emissions associated with the NHS. Accordingly, in the final rule, FHWA has removed the requirement for MPOs to report tailpipe CO₂ emissions for all roads.

Comments on Mutual Agreement on MPO Metric Calculation Method by State DOTs and MPOs

Comment: A small number of commenters addressed the requirement for the MPO metric calculation method to be mutually agreed upon by both the State DOT and the MPO. A few commenters opposed the requirement for the MPO to obtain concurrence on the metric calculation method. Similarly, one commenter recommended that an MPO be allowed to use, without the need to obtain additional approvals, any regional data, models, and methodologies that is already used to measure GHG for purposes of air quality conformity modeling or other GHG performance measures. One commenter recommended the metric calculation method be covered in the "written provisions" section of the system performance report.

Response: The FHWA agrees with commenters that the requirement for MPOs and States to agree on the MPO's metric calculation method creates burden for both groups. In response to the comments, FHWA is not requiring the MPO's metric calculation method to be mutually agreed upon by the State DOT and MPO, but MPOs are encouraged to coordinate with the State DOT on the data used to the maximum extent practicable.

The FHWA has instead added a requirement to section 490.107(c)(2)(ii) that if the metric calculation method used by the MPO is not specified in section 490.511(d), the MPO must demonstrate the method's validity and usefulness in measuring transportation-related CO₂ emissions in the system performance report. The FHWA believes that this change will be sufficient to ensure accountability in the methods MPOs use to calculate the GHG metric, absent the requirement for mutual agreement on the method with State DOTs. Consistent with FHWA's collaboration and coordination requirements in 23 CFR part 450, FHWA encourages MPOs and the State DOTs to work together in identifying methods, tools, and data the MPO's can use to calculate the MPO's metric for the GHG measure.

For additional information related to reporting of the MPO's metric, see the discussion under Comments on MPO Report Content, in the Section-by-Section Discussion for section 490.107.

*Comments on the RIA**Comments on the Estimated Cost of the Regulation*

Comment: Many commenters discussed cost estimates from the RIA. Many commenters asserted that the RIA underestimated direct implementation costs of the measure and provided examples of costs that they believe were underestimated. Examples cited include the time and level of expertise needed to establish targets, conduct biennial reporting, conduct stakeholder engagement, develop and maintain models, and achieve coordination between DOTs, MPOs, and State agencies. Several commenters also asserted that achieving national GHG reduction goals would require significant changes to transportation investments that would carry significant monetary costs and would require significant time to implement. A few commenters also asserted that achieving GHG reductions through strategies to reduce on-road travel activity would create further social and economic costs including increased congestion and travel times. Another commenter asserted that reducing on-road GHG emissions would reduce the consumption of traditionally taxed fuels and require the establishment of a different highway finance revenue model that is not based on the consumption of fossil fuels.

In contrast, several commenters asserted that the burdens of the proposed performance measure would be negligible. These commenters noted that States and MPOs have already established processes and partnerships under the TPM framework and that staff efforts to quantify and report GHG emissions on the NHS would not be expected to create significant cost burden and are in line with existing performance measures.

Other commenters noted that work performed in support of the GHG measure would not support other aspects State DOTs' and MPOs' missions in ways that would mitigate net costs of the proposed rule. One State DOT also asked for clarification on how the total costs of compliance in time and cost is calculated.

Response: The FHWA has reexamined the RIA considering public comments and any updated information, and FHWA has determined that the RIA cost estimates should be primarily unchanged from the RIA in support of the NPRM, with a small reduction in estimated burden based on the elimination of the NPRM requirement for States and MPOs to estimate CO₂ emissions for all roads in addition to the

NHS. The FHWA recognizes commenters' observations that many State DOTs and MPOs will need to develop capacity to address GHG emissions through interagency coordination, stakeholder engagement, and the consideration of strategies to support GHG reduction targets. The FHWA believes that these examples of costs were addressed through the NPRM RIA labor hour estimates for section 490.105, which assume that the level of effort for setting targets in the first reporting period will be approximately twice that of subsequent reporting periods. The FHWA has included in the RIA a break-even analysis of the CO₂ reductions from the rule that would be necessary to equal its costs. This analysis determined that the required reductions would represent a very small proportion of total transportation CO₂ emissions.

In addition, FHWA reiterates State DOTs and MPOs will not experience costs from achieving GHG reduction targets since FHWA is not requiring specific declining target values be established, nor is it mandating penalties for failing to meet the targets established.

The FHWA recognizes that changes in fuel use may impact highway funding. However, as this rulemaking does not require any reductions in fuel use, this issue is outside of the scope of this rulemaking, nor does FHWA have any authority to change the statutory funding scheme established by Congress.

Comments on the Use of the Social Cost of Carbon

Comment: Several commenters raised concerns about the use of the social cost of carbon dioxide (SC-CO₂) to conduct a "break-even" analysis of CO₂ reductions required for the proposed measure to equal its costs. These commenters asserted that use of the Interagency Working Group (IWG) on Social Cost of Greenhouse Gases¹⁹ "interim" social costs of GHGs overstate damages from GHG emissions. In contrast, several commenters noted the social cost of carbon likely significantly underestimates the actual cost of climate damages caused by GHG emissions because important categories

of climate damages cannot be quantified.

Response: As discussed further in the RIA for the final rule, the IWG on Social Cost of Greenhouse Gases published interim estimates for the SC-CO₂ per ton of carbon emissions for each year from 2020 to 2050. As noted by the IWG's technical support document prepared under E.O. 13990, the SC-CO₂ framework in principle can capture all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. The SC-CO₂ estimates used in the break-even analysis for this rule were developed over many years, using transparent process, peer-reviewed methodologies, the best science available at the time of that process, and with input from the public. However, many important categories of climate damages cannot currently be fully quantified and monetized, and so the SC-CO₂ values very likely underestimate the climate damages caused by GHG pollution. The IWG's technical support document further notes that the SC-CO₂ as estimated should reflect the societal value of reducing CO₂ emissions by one metric ton, and that the SC-CO₂ is the theoretically appropriate value to use in conducting economic analyses of policies that affect CO₂ emissions.²⁰ The DOT is an IWG member, and FHWA has reviewed the technical support document and has determined that the recommended values are appropriate for use in the break-even analysis in the RIA.

VIII. Rulemaking Analyses and Notices*A. Executive Order 12866 (Regulatory Planning and Review), Executive Order 13563 (Improving Regulation and Regulatory Review), and DOT Regulatory Policies and Procedures*

The Office of Management and Budget (OMB) has determined that this rulemaking is a significant regulatory action within the meaning of E.O. 12866, as amended by E.O. 14094 ("Modernizing Regulatory Review"), because it raises legal or policy issues for which centralized review would meaningfully further the President's

¹⁹ Interagency Working Group on Social Cost of Greenhouse Gases, U.S. Government. "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990" (February 2021), available at <https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocumentSocialCostofCarbonMethaneNitrousOxide.pdf>.

²⁰ Interagency Working Group on Social Cost of Greenhouse Gases, U.S. Government. "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990" (February 2021), available at <https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocumentSocialCostofCarbonMethaneNitrousOxide.pdf>.

priorities or the principles set forth E.O. 12866. The rule will not have an annual effect on the economy of \$200 million or more. The rule will not adversely affect in a material way the economy, any sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, territorial, or tribal governments or communities. In addition, the changes would not interfere with any action taken or planned by another agency and would not materially alter the budgetary impact of any entitlements, grants, user fees, or loan programs. As described above, FHWA estimates that total costs associated with this rule, between 2023 and 2032, will be \$10.8 million, discounted at 7 percent, and \$12.7 million discounted at 3 percent (these figures are estimated in 2020 dollars). On an annual basis, the total costs would be \$1,535,045 discounted at 7 percent and \$1,494,406 discounted at 3 percent. The FHWA is unable to quantify the benefits of the rulemaking; consequently, FHWA describes the expected benefits qualitatively in the preamble and the RIA. These benefits include potentially significant reductions in GHG emissions resulting from decisions and actions based on greater consideration of GHG emissions in transportation planning, public awareness of GHG emissions trends, and better information on the impact of transportation decisions on GHG emissions. While many of the benefits in the proposed rule are difficult to quantify, FHWA believes that the benefits justify the costs. As discussed in greater detail in the RIA, FHWA estimates that benefits of this rule would exceed its costs with a reduction of less than 0.01 percent of the average annual amount of CO₂ emissions from U.S. transportation sources in 2019, based on a range of discount rates used to estimate the social cost of CO₂ and the 7 and 3 percent discount rates used to estimate the total costs of the final rule. The full RIA is available in the docket.

B. Regulatory Flexibility Act

In compliance with the Regulatory Flexibility Act (Pub. L. 96–354, 5 U.S.C. 601–612), FHWA has evaluated the effects of this rule on small entities and has determined that it is not anticipated to have a significant economic impact on a substantial number of small entities. The rule will affect two types of entities: State governments and MPOs. State governments are not included in the definition of small entity set forth in 5 U.S.C. 601. Metropolitan planning organizations are considered governmental jurisdictions,

and to qualify as a small entity they would need to serve fewer than 50,000 people. See 5 U.S.C. 601(5). Metropolitan planning organizations are designated to serve UZAs with populations of 50,000 or more. See 23 U.S.C. 134(d)(1). Therefore, FHWA certifies that the rule will not have a significant economic impact on a substantial number of small entities.

C. Unfunded Mandates Reform Act of 1995

This rule would not impose unfunded mandates as defined by the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4, 109 Stat. 48). The Unfunded Mandates Reform Act of 1995 (section 202(a)) requires us to prepare a written statement, which includes estimates of anticipated impacts, before proposing “any rule that includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100,000,000 or more (adjusted annually for inflation) in any one year.” The current threshold after adjustment for inflation is \$177 million, using the most current (2022) Implicit Price Deflator for the Gross Domestic Product. This rule will not result in the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector, of \$177 million or more in any one year (2 U.S.C. 1532). In addition, the definition of “Federal Mandate” in the Unfunded Mandates Reform Act excludes financial assistance of the type in which State, local, or Tribal governments have authority to adjust their participation in the program in accordance with changes made in the program by the Federal Government. The Federal-aid highway program permits this type of flexibility.

D. Executive Order 13132 (Federalism Assessment)

This rule has been analyzed in accordance with the principles and criteria contained in E.O. 13132, and FHWA has determined that this rule will not have sufficient federalism implications to warrant the preparation of a federalism assessment. The FHWA also has determined that this rule will not preempt any State law or State regulation or affect the States’ ability to discharge traditional State governmental functions.

E. Paperwork Reduction Act of 1995

Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501, *et seq.*), Federal agencies must obtain approval from OMB for each collection of information they conduct, sponsor, or require through regulations. The FHWA

has determined that this rule contains collection of information requirements for the purposes of the PRA. This rule introduces a GHG performance measure that will be implemented as part of the overarching TPM regulations in 23 CFR part 490, which includes State DOT reporting on performance. The collection of State DOT reports in support of 23 CFR 490.107 is covered by OMB Control No. 2125–0656.

The FHWA has analyzed this rule under the PRA and has determined the following:

Respondents: 52 State DOTs.

Frequency: Single State Initial GHG Report, and ongoing biennial reporting.

Estimated Average Burden per Response: Approximately 88 hours to complete and submit the required report, or 44 hours annually.

Estimated Total Annual Burden Hours: Approximately 2,288 hours annually.

In addition, MPO coordination and reporting activities are covered by OMB Control No. 2132–0529, Metropolitan and Statewide and Nonmetropolitan Transportation Planning.

F. National Environmental Policy Act

The FHWA has analyzed this rule pursuant to the NEPA and has determined that it is categorically excluded under 23 CFR 771.117(c)(20), which applies to the promulgation of rules, regulations, and directives. Categorically excluded actions meet the criteria for categorical exclusions under the Council on Environmental Quality regulations and under 23 CFR 771.117(a) and normally do not require any further NEPA approvals by FHWA. This rule will establish in FHWA regulations a performance measure for on-road CO₂ emissions on the NHS for use by States and MPOs in measuring transportation performance. The FHWA does not anticipate any adverse environmental impacts from this rule, the purpose of which is to inform decisionmaking about the transportation sector’s contribution to GHG emissions, and thereby contribute to environmental sustainability; moreover, no unusual circumstances are present under 23 CFR 771.117(b).

G. Executive Order 13175 (Tribal Consultation)

The FHWA has analyzed this rule in accordance with the principles and criteria contained in E.O. 13175, “Consultation and Coordination with Indian Tribal Governments.” The rule will implement statutory requirements under 23 U.S.C. 150(c)(3)(A)(ii)(IV)–(V) to establish measures for States to assess the performance of the Interstate and

non-Interstate NHS, which FHWA interprets to include environmental performance. This measure establishes requirements only for States and MPOs that receive Title 23 Federal-aid highway funds and have NHS mileage within their jurisdictions; it would not have direct effects on one or more Indian Tribes, would not impose substantial direct compliance costs on Indian Tribal governments, and would not preempt Tribal laws. Accordingly, the funding and consultation requirements of E.O. 13175 do not apply and a Tribal summary impact statement is not required.

As noted above, FHWA anticipates the benefits from this rulemaking include potentially significant reductions in GHG emissions resulting from decisions and actions based on greater consideration of GHG emissions in transportation planning by States and MPOs, public awareness of GHG emissions trends, and better information on the impact of transportation decisions on GHG emissions. Although this rulemaking does not apply to Tribes, FHWA expects that Tribes would benefit from potential reductions in GHG emissions that result from State and MPO implementation of this rulemaking.

H. Executive Order 12898 (Environmental Justice)

The E.O. 12898 requires that each Federal Agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minorities and low-income populations. The FHWA has determined that this rule does not raise any environmental justice issues.

I. Regulation Identifier Number

A RIN is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN contained in the heading of this document can be used to cross reference this action with the Unified Agenda.

List of Subjects in 23 CFR Part 490

Bridges, Highway safety, Highways and roads, Reporting and recordkeeping requirements.

Issued under authority delegated in 49 CFR 1.81 and 1.85.

Shailen P. Bhatt,
Administrator, Federal Highway Administration.

In consideration of the foregoing, FHWA amends Title 23, Code of Federal Regulations by revising part 490, to read as follows:

PART 490—NATIONAL PERFORMANCE MANAGEMENT MEASURES

■ 1. The authority citation for part 490 continues to read as follows:

Authority: 23 U.S.C. 134, 135, 148(i), and 150; 49 CFR 1.85.

■ 2. Amend § 490.101 by adding in alphabetical order the definition of “Fuels and Financial Analysis System—Highways (Fuels & FASH)” to read as follows:

§ 490.101 Definitions.

Fuels and Financial Analysis System—Highways (Fuels & FASH) as used in this part means FHWA’s system of record for motor fuel, highway program funding, licensed drivers, and registered vehicles data.

■ 3. Amend § 490.105 by:

- a. Adding paragraph (c)(5);
- b. Revising paragraph (d) introductory text, and adding paragraphs (d)(1)(v) and (d)(4);
- c. Adding paragraphs (e)(1)(i), (e)(1)(ii), and (e)(4)(i)(C), revising paragraph (e)(4)(iii), and adding paragraph (e)(10); and
- d. Revising paragraphs (f)(1)(i) and (f)(3), and adding paragraph (f)(10).

The additions and revisions read as follows:

§ 490.105 Establishment of performance targets.

(c) * * *

(5) 490.507(b) for greenhouse gas (GHG) emissions on the NHS;

* * *

(d) *Target scope.* Targets established by State DOTs and MPOs shall, regardless of ownership, represent the transportation network or geographic area, including bridges that cross State borders, that are applicable to the measures as specified in paragraphs (d)(1), (2), and (4) of this section.

(1) * * *

(v) 490.503(a)(2) for the GHG measure specified in § 490.507(b);

* * *

(4) MPOs shall establish a joint target for the GHG measure specified in

§ 490.507(b), for each urbanized area that meets the criteria specified in paragraph (f)(10) of this section. The joint target shall represent the performance of the transportation network specified in § 490.503(a)(2).

(e) * * *

(1) *Schedule.* State DOTs shall establish targets not later than the dates provided in paragraphs (e)(1)(i) and (e)(1)(ii) of this section, and for each performance period thereafter, in a manner that allows for the time needed to meet the requirements specified in this section and so that the final targets are submitted to FHWA by the due date provided in § 490.107(b).

(i) State DOTs shall establish initial targets not later than May 20, 2018, except as provided in paragraph (e)(1)(ii) of this section.

(ii) State DOTs shall establish initial targets for the GHG measure identified in § 490.507(b) not later than February 1, 2024.

* * *

(4) * * *

(i) * * *

(C) For the GHG measure in § 490.105(c)(5), the performance period will begin on January 1, 2022 and will extend for a duration of 4-years. Subsequent performance periods will begin as described in paragraph (4)(i)(A) of this section.

* * *

(iii) Except as provided in paragraphs (e)(7) and (e)(8)(v), and (e)(10)(i) of this section, State DOTs shall establish 2-year targets that reflect the anticipated condition/performance level at the midpoint of each performance period for the measures in paragraphs (c)(1) through (7) of this section, and the anticipated cumulative emissions reduction to be reported for the first 2 years of a performance period by applicable criteria pollutant and precursor for the measure in paragraph (c)(8) of this section.

* * *

(10) *Targets for the GHG measure.*

Targets established for the GHG measure in paragraph (c)(5) of this section shall be declining targets for reducing tailpipe CO₂ emissions on the NHS.

(i) The following requirements apply only to the targets established for the State Initial GHG Report, described in § 490.107(d), and 2026 Full Performance Period Progress Report, described in § 490.107(b)(3), for the measure in § 490.507(b):

(A) State DOTs are exempt from the required 2-year target described in paragraph (e)(4)(iii) of this section.

(B) State DOTs shall establish a 4-year target, required under paragraph

(e)(4)(iv) of this section, and report this target in their 2024 State Initial GHG Report, required under § 490.107(d).

(C) The performance for the reference year shall be used as the baseline performance.

(f) * * *

(1) * * *

(i) The MPOs shall establish 4-year targets, described in paragraph (e)(4)(iv) of this section, for all applicable measures, described in paragraphs (c) and (d) of this section. For the GHG measure described in (c)(5) of this section, the targets established shall be declining targets for reducing tailpipe CO₂ emissions on the NHS.

* * * * *

(3) *Target establishment options.* For each performance measure identified in paragraph (c) of this section, except the CMAQ Traffic Congestion measures in paragraph (f)(5) of this section, MPOs meeting the criteria under paragraph (f)(6)(iii) of this section for Total Emissions Reduction measure, the MPOs shall establish targets for the metropolitan planning area by either:

(i) Agreeing to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT target for that performance measure; or

(ii) Committing to a quantifiable target for that performance measure for their metropolitan planning area.

* * * * *

(10) *Joint Targets for the GHG Measure.* Where an urbanized area contains mainline highways on the NHS, and any portion of that urbanized area is overlapped by the metropolitan planning area boundaries of two or more MPOs, those MPOs shall collectively establish a single joint 4-year target for that urbanized area, described in paragraph (e)(4)(iv) of this section. The target established shall be a declining target for reducing tailpipe CO₂ emissions on the NHS. This joint target is in addition to the targets for the metropolitan planning area required in paragraph (f)(1)(i) of this section.

(i) The NHS designations and urbanized area data shall be from the data contained in HPMS 1 year before the State DOT Baseline Performance Period Report is due to FHWA.

(ii) Only one target shall be established for the entirety of each applicable urbanized area regardless of roadway ownership. In accordance with paragraph (f)(9) of this section, each MPO shall report the same joint target for the urbanized area.

(iii) The target established for each urbanized area shall represent a quantifiable target for that urbanized area.

■ 4. Amend § 490.107 by

■ a. Revising paragraphs (a)(1) and (b)(1)(i), and adding paragraph (b)(1)(ii)(H);

■ b. Revising paragraph (b)(2)(i) and adding paragraph (b)(2)(ii)(J);

■ c. Revising paragraph (b)(3)(i) and adding paragraph (b)(3)(ii)(I);

■ d. Revising paragraph (c)(2); and

■ e. Adding paragraph (d).

The additions and revisions read as follows:

§ 490.107 Reporting on performance targets.

(a) * * *

(1) All State DOTs and MPOs shall report in accordance with the schedule and content requirements under paragraphs (b), (c), and (d) of this section, respectively.

* * * * *

(b) * * *

(1) * * *

(i) *Schedule.* State DOTs shall submit a Baseline Performance Period Report to FHWA by October 1st of the first year in a performance period. State DOTs shall submit their first Baseline Performance Period Report to FHWA by October 1, 2018, and subsequent Baseline Performance Period Reports to FHWA by October 1st every 4 years thereafter, except for the GHG measure specified in § 490.105(c)(5). For the Baseline Performance Period Report, State DOTs shall submit information related to the GHG measure in the report due to FHWA by October 1, 2026, and every 4 years thereafter.

(ii) * * *

(H) GHG metric and metric information for the GHG measure. The metric and the individual values used to calculate the GHG metric, as described in § 490.511(c), for the calendar year preceding the reporting year, and a description of the data source(s) used for the VMT information.

* * * * *

(2) * * *

(i) *Schedule.* State DOTs shall submit a Mid Performance Period Progress Report to FHWA by October 1st of the third year in a performance period. State DOTs shall submit their first Mid Performance Period Progress Report to FHWA by October 1, 2020, and subsequent Mid Performance Period Progress Reports to FHWA by October 1st every 4 years thereafter, except for the GHG measure specified in § 490.105(c)(5). For the Mid Performance Period Progress Report, the State DOTs shall submit information related to the GHG measure in the report due to FHWA by October 1, 2028, and every 4 years thereafter.

(ii) * * *

(J) GHG metric and metric information for the GHG measure. The metric and the individual values used to calculate the GHG metric, as described in § 490.511(c), for the calendar year preceding the reporting year, and a description of the data source(s) used for the VMT information.

* * * * *

(b) * * *

(3) * * *

(i) *Schedule.* State DOTs shall submit a progress report on the full performance period to FHWA by October 1st of the first year following the reference performance period. State DOTs shall submit their first Full Performance Period Progress Report to FHWA by October 1, 2022, and subsequent Full Performance Period Progress Reports to FHWA by October 1st every 4 years thereafter, except for the GHG measure specified in § 490.105(c)(5). For the Full Performance Period Progress Report, State DOTs shall submit information related to the GHG measure in the report due to FHWA by October 1, 2026, and every 4 years thereafter.

(ii) * * *

(I) *GHG metric and metric information for the GHG measure.* The metric and the individual values used to calculate the GHG metric, as described in § 490.511(c), for the calendar year preceding the reporting year, and a description of the data source(s) used for the VMT information.

(c) * * *

(2) The MPOs shall report baseline condition/performance and progress toward the achievement of their targets in the system performance report in the metropolitan transportation plan in accordance with part 450 of this chapter. For the GHG measure in § 490.105(c)(5), the MPOs shall also report:

(i) The calculation of annual tailpipe CO₂ emissions for the NHS, and may include all public roads, described in § 490.511(f), for the period between the current and previous system performance report, and the reference year.

(ii) A description of the metric calculation method(s) used, as described in § 490.511(d). When the method(s) used are not specified in § 490.511(d), the MPO must include information demonstrating the method(s) has valid and useful results for measuring transportation related CO₂.

* * * * *

(d) *State Initial GHG Report.* For the GHG measure in § 490.105(c)(5), State DOTs shall submit an Initial GHG Report by February 1, 2024.

(1) The State Initial GHG Report shall include:

(i) *Targets*. The 4-year target for the performance period, as required in § 490.105(e), and a discussion, to the maximum extent practicable, of the basis for the established target;

(ii) *Baseline performance*. Performance derived from the data collected for the reference year, for the 4-year target required under paragraph (d)(1) of this section;

(iii) *Relationship with other performance expectations*. A discussion, to the maximum extent practicable, on how the established target in paragraph (d)(1) of this section support expectations documented in longer range plans, such as the State asset management plan required by 23 U.S.C. 119(e) and the long-range statewide transportation plan provided in part 450 of this chapter; and

(iv) *GHG metric and metric information for the GHG measure*. The metric and the individual values used to calculate the GHG metric, as described in § 490.511(c), for the reference year.

(2) For the State Initial GHG Report, the State DOT shall use the following data to calculate the GHG metric, described in § 490.511(c), for the reference year.

(i) Data published by FHWA for the CO₂ factors for each on-road fuel type associated with the reference year.

(ii) The fuel consumed data shall meet the requirements in § 490.509(g) for the reference year.

(iii) The VMT data shall meet the requirements of § 490.509(h) for the reference year.

■ 5. Amend § 490.109 by adding paragraph (d)(1)(v), revising paragraph (d)(1)(vi), and adding paragraphs (d)(1)(vii), (e)(4)(vi) and (vii), (e)(6), and (f)(1)(v) to read as follows:

§ 490.109 Assessing significant progress toward achieving the performance targets for the National Highway Performance Program and the National Highway Freight Program.

* * * * *

(d) * * *

(1) * * *

(v) Data contained within Fuels & FASH on August 15th of the year in which the significant progress determination is made that represents performance from the prior year for targets established for the GHG measure in § 490.105(c)(5), and data from Fuels & FASH that represents performance for the reference year.

(vi) Baseline condition/performance data contained in Fuels & FASH, HPMS, and NBI of the year in which the Baseline Period Performance Report is

due to FHWA that represents baseline conditions/performances for the performance period for the measures in §§ 490.105(c)(1) through (5). For the GHG measure, specified in § 490.105(c)(5), the baseline performance data from HPMS shall be the data contained within HPMS on November 30th of the year the Baseline Period Performance Report is due to FHWA.

(vii) Data contained within the HPMS on November 30th of the year in which the significant progress determination is made that represents performance from the prior year for targets established for the GHG measure specified in § 490.105(c)(5), and HPMS data as of November 30, 2023 that represents performance for the reference year.

(viii) The CO₂ factor specified in § 490.509(f) for the baseline performance, prior year, and reference year for targets established for the GHG measure specified in § 490.105(c)(5).

* * * * *

(e) * * *

(4) * * *

(vi) A State DOT's reported data are not accepted in the Fuels & FASH, by the data extraction date specified in paragraph (d)(1) of this section for the GHG measure in § 490.105(c)(5).

(vii) A State DOT's reported data are not accepted in the HPMS by the data extraction date specified in paragraph (d)(1) of this section for the GHG measure in § 490.105(c)(5).

* * * * *

(6) *Phase-in of new requirements for the GHG Measure*. The following requirements shall only apply to the GHG targets, described in § 490.513(d), and the significant progress determination conducted immediately after the submittal of the 2024 Mid Performance Period Progress Report, described in § 490.107(b)(2):

(i) Consistent with § 490.105(e)(10)(i), State DOTs are not required to establish a 2-year target, and, consistent with 490.107(b)(2), State DOTs will not submit information related to the GHG measure in the 2024 Mid Performance Period Progress Report.

(ii) At the midpoint of the performance period, FHWA shall not make a determination of significant progress toward the achievement of 2-year targets for the GHG measure; and

(iii) The FHWA will classify the assessment of progress toward the achievement of targets in paragraph (e)(6)(ii) of this section as "progress not determined" and they will be excluded from the requirement under paragraph (e)(2) of this section.

(f) * * *

(1) * * *

(v) If significant progress is not made for the target established for the GHG measure in § 490.105(c)(5), then the State DOT shall document the actions it will take to achieve the GHG performance target.

* * * * *

Subpart E—National Performance Management Measures To Assess Performance of the National Highway System

■ 6. Amend § 490.503 by adding paragraph (a)(2) to read as follows:

§ 490.503 Applicability.

(a) * * *

(2) The Greenhouse Gas (GHG) measure in § 490.507(b) is applicable to all mainline highways on the Interstate and non-Interstate NHS.

* * * * *

■ 7. Amend § 490.505 by adding in alphabetical order definitions of "Greenhouse gas", and "Reference year" to read as follows:

§ 490.505 Definitions.

* * * * *

Greenhouse gas (GHG) is any gas that absorbs infrared radiation (traps heat) in the atmosphere. Approximately 97 percent of on-road GHG emissions are carbon dioxide (CO₂) from burning fossil fuel. Other transportation GHGs are methane (CH₄), nitrous oxide (N₂O), and hydrofluorocarbons (HFCs).

* * * * *

Reference year is calendar year 2022 for the purpose of the GHG measure.

* * * * *

■ 8. Amend § 490.507 by revising the introductory text and adding paragraph (b) to read as follows:

§ 490.507 National performance management measures for system performance.

There are three performance measures to assess the performance of the Interstate System and the performance of the non-Interstate NHS for the purpose of carrying out the National Highway Performance Program (referred to collectively as the NHS Performance measures).

* * * * *

(b) One measure is used to assess GHG emissions, which is the percent change in tailpipe CO₂ emissions on the NHS compared to the reference year (referred to as the GHG measure).

■ 9. Amend § 490.509 by adding paragraphs (f) through (h) to read as follows:

§ 490.509 Data requirements.

* * * * *

(f) The FHWA will post on the FHWA website, no later than August 15th of each reporting year, the CO₂ factors for each on-road fuel type that will be used to calculate the GHG metric for the GHG measure in § 490.105(c)(5).

(g) Fuel sales information needed to calculate the fuel consumed for the GHG measure in § 490.507(b) shall:

(1) Represent the total number of gallons of fuel consumed by fuel type; and

(2) Be based on fuels sales data for the prior calendar year, and reported to Fuels & FASH.

(h) Annual vehicle miles traveled (VMT) needed to calculate the GHG measure in § 490.507(b) shall come from the best available data that represents the prior calendar year and is consistent, to the maximum extent practicable, with data submitted to HPMS. The VMT data needed to calculate the GHG metric in § 490.511(c) for the reference year, shall be the HPMS data as of November 30, 2023.

■ 10. Amend § 490.511 by adding paragraphs (a)(2), (c), (d), and (f) to read as follows:

§ 490.511 Calculation of National Highway System performance metrics.

(a) * * *

(2) Annual Total Tailpipe CO₂ Emissions on the NHS for the GHG measure in § 490.507(b) (referred to as the GHG metric).

* * * * *

(c) Tailpipe CO₂ emissions on the NHS for a given year shall be computed in million metric tons (mmt) and rounded to the nearest hundredth as follows:

Equation 1 to paragraph (c)

$$(\text{Tailpipe CO}_2\text{Emissions on NHS})_{\text{CY}} = \left(\sum_{t=1}^T (\text{Fuel Consumed})_t \times (\text{CO}_2\text{Factor})_t \right) \times \left(\frac{\text{NHS VMT}}{\text{Total VMT}} \right)$$

Where:

(Tailpipe CO₂ Emissions on NHS)_{CY} = Total tailpipe CO₂ emissions on the NHS in a calendar year (expressed in mmt, and rounded to the nearest hundredth);

T = the total number of on-road fuel types; t = an on-road fuel type;

(Fuel Consumed)_t = the quantity of total annual fuel consumed for on-road fuel type "t" (to the nearest thousand gallons);

(CO₂ Factor)_t = is the amount of CO₂ released per unit of fuel consumed for on-road fuel type "t";

NHS VMT = annual total vehicle-miles traveled on NHS (to the nearest one million vehicle-miles); and

Total VMT = annual total vehicle-miles traveled on all public roads (to the nearest one million vehicle-miles).

(d) For the GHG measure specified in § 490.507(b), MPOs are granted additional flexibility in how they calculate the GHG metric, described in

§ 490.511(a)(2). MPOs may use the MPO share of the State's VMT as a proxy for the MPO share of CO₂ emissions in the State, VMT estimates along with MOVES¹ emissions factors, FHWA's Energy and Emissions Reduction Policy Analysis Tool (EERPAT) model, or other method the MPO can demonstrate has valid and useful results for CO₂ measurement.

* * * * *

(f) Tailpipe CO₂ emissions generated by on-road sources travelling on the NHS (the GHG metric), and generated by on-road sources travelling on all roadways (the step in the calculation prior to computing the GHG metric) shall be calculated as specified in paragraph (c) of this section. The calculations shall be reported in the State Biennial Performance Reports, as required in § 490.107, and shall address the following time periods.

(1) The reference year, as required in § 490.107(b)(1)(ii)(H); and

(2) The calendar year preceding the reporting year, as required in § 490.107(b)(1)(ii)(H), (b)(2)(ii)(J) and (b)(3)(ii)(I).

¹ MOVES (Motor Vehicle Emission Simulator) is EPA's emission modeling system that estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, GHGs, and air toxics. See <https://www.epa.gov/moves>. The EMFAC model is used in California for emissions analysis.

■ 11. Amend § 490.513 by adding paragraph (d) to read as follows:

§ 490.513 Calculation of National Highway System performance measures.

* * * * *

(d) The GHG measure specified in § 490.507(b) shall be computed to the nearest tenth of a percent as follows:

Equation 3 to paragraph (d)

$$\frac{(\text{Tailpipe CO}_2\text{Emissions on NHS})_{\text{CY}} - (\text{Tailpipe CO}_2\text{Emissions on NHS})_{\text{reference year}}}{(\text{Tailpipe CO}_2\text{Emissions on NHS})_{\text{reference year}}} \times 100$$

Where:

(Tailpipe CO₂ Emissions on NHS)_{CY} = total tailpipe CO₂ emissions on the NHS in a calendar year (expressed in million

metric tons (mmt), and rounded to the nearest hundredth); and
(Tailpipe CO₂ Emissions on NHS)_{reference year} = total tailpipe CO₂ emissions on the NHS in calendar year 2022 (expressed in

million metric tons (mmt), and rounded to the nearest hundredth).

■ 12. Add § 490.515 to read as follows:

§ 490.515 Severability.

The provisions of §§ 490.105(c)(5), 105(d), 105(d)(1)(v), 105(d)(4), 105(e)(1)(i), 105(e)(1)(ii), 105(e)(4)(i)(C), 105(e)(4)(iii), 105(e)(10), 105(f)(1)(i), 105(f)(3), 105(f)(10), 107(a)(1), 107(b)(1)(i), 107(b)(1)(ii)(H), 107(b)(2)(i),

107(b)(2)(ii)(J), 107(b)(3)(i), 107(b)(3)(ii)(I), 107(c)(2), 107(d), 109(d)(1)(v), 109(d)(1)(vi), 109(d)(1)(vii), 109(d)(1)(viii), 109(e)(4)(vi), 109(e)(4)(vii), 109(e)(6), 109(f)(1)(v), 503(a)(2), 505, 507(b), 509(f), 509(g), 509(h), 511(a)(2), 511(c), 511(d) 511(f), and 513(d) are separate and severable

from one another and from the other provisions of this part. If any provision is stayed or determined to be invalid, the remaining provisions shall continue in effect.

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